THE DETERMINATION OF EXCESS COSTS RELATING TO MULTIDISTRICT EXCEPTIONAL STUDENT EDUCATION PROGRAMS

By

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Abstract of Dissertation Presented to the Graduate Council of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

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Since the passage of P.L. 94-142, The Education for All Handicapped Children Act of 1975, there have been increasing demands for an array of programs and services for identified handicapped students. A search of the literature revealed that a growing number of students have received exceptional education services through multidistrict programs. There was a paucity of data on the cost of exceptional education provided through a multidistrict program. Therefore, the focal point of the study was the determination of the costs incurred by the host and participating school districts in multidistrict exceptional education programs.

Two resource cost models were developed for the host and participating districts to determine if excess costs are incurred by the host or participating districts. The resource cost models were implemented with cost data from multidistrict physically impaired

and hearing impaired programs. A comparable replication program was designed as a within the district program for the host and participating districts to provide alternative organizational arrangements from which the district leaders could select program options.

Based on the findings of the study, the researcher concluded that it is more cost efficient for host district leaders to serve their low incidence students in a multidistrict program than a within the district program. It was also more cost efficient for participating district leaders to serve their low incidence students in a multidistrict program rather than in a within the district program An additional conclusion was that the district administrators who provide the transportation for their students to the multidistrict program will generate revenue in their transportation allocation beyond the added expenses incurred.

CHAPTER I
INTRODUCTION

The number of students receiving exceptional education services through multidistrict programs has grown steadily in recent years. Squires (1973/1974) reported that multidistrict exceptional education programs were operational in 39 of the 50 states. Helge (1984b) pointed out that cost collaboratives are relatively new developments that came into existence during the past two decades. Helge further reported that almost all states have multidistrict programs of some type. In a study conducted by Cox (1981/1982), it was stated that selected authorities supported the concept that multidistrict programs are a feasible, alternative method of providing exceptional education programs in lieu of the single district approach. Sage and Burrello (1986) acknowledged that the growth of multidistrict programs was quite clear, both in numbers and the responsibilities they carry out. They further emphasized that the role of the multidistrict program as the service provider for low incidence handicapped students appeared long enduring.

Public Law 94-142, The Education for All Handicapped Children Act of 1975, required that both rural and urban school district leaders provide an array of services to handicapped students. Some

handicapping conditions have such a low incidence rate that it is difficult for district staff to identify a sufficient number of students to provide an appropriate continuum of services. In districts with sparse student populations, educators even find it difficult to provide appropriate services for students with handicapping conditions that have higher incidence rates. Therefore, in order to provide effective programs, alternative organizational arrangements must be identified by school district administrators. Multidistrict programs offer an innovative approach to solving this complex problem.

The idea of a cooperative organization is not a new concept. Todd (1971) reported that the Mayflower Compact of 1620 was the first instrument that formed a cooperative venture in the New World. Benjamin Franklin was among the group of men that formed a cooperative association in Philadelphia to fight fires. Laborers, farmers, and small businessmen have cooperated over the years for economic growth and protection. These cooperatives formed the basis for labor unions, credit unions, savings and loan associations, and rural organizations such as the National Grange and the Farmers' Alliance (Todd, 1971). In 1948, a network of Boards of Cooperative Educational Service (BOCES), which was initially designed to meet the needs of rural districts too small or too poor to provide a full range of services, was established in the State of New York. Legislation was enacted that created intermediate or regional districts to provide specialized

services to two or more districts upon request. However, programs have also been developed extensively in suburban regions of New York State (Colella & Foster, 1974; Nyquist, 1973).

The establishment of multidistrict programs was encouraged through Title III of the Elementary and Secondary Education Act (ESEA) by providing grants to combinations of districts as well as single districts. Over half of the first 217 approved were for multidistrict projects. In some states, the staff of state department of education developed multidistrict programs under Title V of ESEA (Pine, 1972). Lord and Isenberg (1964) noted that educators at all levels must acknowledge that expanding and extending specialized education services that are not now available cannot be provided by the traditional single district approach. Gearhart (1967) also stated, "if there is any real hope of extending special education services to smaller districts it is through the development of some type of cooperative inter-district plan" (p. 49).

As the magnitude for resources requested for the education of handicapped students increases, the need for information concerning the costs of these programs is intensified. The present state of the economy necessitates the maximizing of resources utilized by education. All resources must be effectively combined to produce efficient delivery systems (Marinelli, 1975).

The cost expenditures of each program must be analyzed and compared to the revenues generated by the program to determine if

there are excess costs involved in providing the program. This allows the district staff to assess the cost of various alternative arrangements and utilize that information in the decision of program alternative selection.

In program cost studies, costs for exceptional programs varied from 1 1/2 to 4 times the costs of regular programs (Bentley, 1970; Essige, 1983; Rossmiller, Hale, & Frohreich, 1970; Sorenson, 1973; Voss & Wendel, 1982). In addition, Naisbitt (1984) emphasized that futuristic trends forecast more networking and interagency collaboration and researchers of regional educational structures anticipate the formation of additional multidistrict programs (Howe, 1981). Subsequently, the utilization of multidistrict programs can be expected to increase within the educational system. Although cost studies have been completed on the cost of specific exceptionalities and the way in which this service is delivered within the local school district, a method for determining the cost of exceptional student education provided through a multidistrict program had not been developed.

The Problem

Statement of the Problem

This study was designed to determine if excess costs are incurred by the host and participating districts in multidistrict exceptional student education programs. Specifically, the questions addressed in this study were the following

1. Does a multidistrict program generate additional costs to a host district that would not be incurred in a within the district program and what is the relationship, if any, to the support generated by the Florida Education Finance Program?
2. Does a multidistrict program generate costs for the participating district and what is the relationship, if any, to the support generated by the Florida Education Finance Program?
3. What estimated costs would be generated for participating districts if a within the district program was implemented in lieu of participating in a multidistrict program and what is the relationship, if any, to the support generated by the Florida Education Finance Program?

Delimitations

This study was confined to programs and services offered through two multidistrict exceptional student education programs in a host district in the crown region of Florida during the 1985-86 school year. Programs offered for hearing impaired students and physically impaired students were the subject of this study.

Limitations

The study was subject to certain limitations inherent in descriptive studies. The findings of the study cannot be generalized

because the study investigated selected school districts in the crown region of Florida.

Justification for the Study

The concept of multidistrict programs began in the 1940s and has been increasingly utilized as a viable organization structure (Helge, 1984b; Squires, 1973/1974). Since the passage of P.L. 94-142, The Education for All Handicapped Children Act of 1975, there has been an increasing demand for programs and services for newly identified handicapped students. In order to implement these new mandated programs, increased costs at the level of local districts have been incurred.

In 1970, Rossmiller, Hale, and Frohreich identified the configuration of human and material resources in programs for exceptional children. It was projected that the cost for special education in 1980 would be more than $10 billion. Rossmiller et al. emphasized that it would be difficult for comprehensive programs and services to all handicapped students to be provided in some districts. Their position was reinforced by the following:

> It is obvious that some local school districts will never have a target population large enough to enable them to mount effective, efficient educational programs for all categories of exceptional children--at least at typical prevalence rates. In sparsely populated areas, even very large school districts will have difficulty providing educational programs for certain categories of handicapped children. In other cases, school districts may have a population large enough to provide quality programs for most types of exceptional children, but not for all categories of exceptionality.

> These problems point to the need for alternative organizational arrangements to accommodate the educational needs of exceptional children in situations where local school districts cannot provide adequately for their needs. . . . In many states some local school districts are too small to provide adequately for the educational needs of exceptional children without incurring an exorbitant cost on a per pupil basis. In such cases the establishment of alternative organizational arrangements for the education of exceptional children is necessary. . . . It would appear that both cooperative arrangements involving groups of local school districts and programs for exceptional children coordinated by an intermediate unit offer feasible organization alternatives. (pp. 131-132)

In 1975, Johns developed an index of extra costs of education due to sparsity. Johns reported that the number of different exceptional education programs available within the county school districts of Florida was a maximum of 15. The 11 districts having the largest number of full-time equivalent students provided from 12 through 15 different types of programs. In the 26 county districts with the smallest number of students, the range in programs was 1-7, with the average being 4 programs. Johns (1975) stated "obviously the programs for exceptional education are not equivalent in the sparsely populated counties to the programs available in the larger counties" (p. 176). In these sparsely populated districts, leaders must utilize alternative organizational arrangements in order to provide equal access to equivalent educational opportunities.

Helge (1984a) reported that since the passage of Public Law 94-142 in 1975 that special education multidistrict programs have mushroomed. Multidistrict programs have been encouraged by the requirement that a district must be eligible to receive a minimum of

$7500 or the district staff must consolidate their application for federal funds with other districts in order to reach the minimum before they can receive flow-through monies from the state education agency.

The most imperative special education issue today is finance and the insufficiency of funds to implement court ordered and legislatively mandated special education services (Kakalik, 1978). Based on the need of specialized educational services, the cost of special education is greater than basic education. Therefore, it is imperative that district personnel assess the cost of providing services through alternative organizational arrangements.

Kakalik (1978) proposed that cost information was needed for a variety of purposes. Some of the major purposes were the following:

1. to aid in planning and evaluating educational programs for individual children;
2. to facilitate better education system planning and evaluation by enhancing understanding of programming arrangements;
3. to aid in determining the level of financing required to provide an appropriate education for all handicapped children, and
4. to allow adjustment of finance formulas to match need and enhance equalization efforts and reduce fiscal incentives for inappropriate classification and inappropriate educational placements of children. (p. 21)

Provision of an appropriate program for exceptional students by school boards is required by Florida statutes. The statutes authorize the school board to provide the special instruction through classes and services either within the district school system or in cooperation with other district school systems. In addition, Florida

statutes permit school boards to adopt plans for cooperating with school boards of adjoining districts in this state or in adjoining states. The conditions of the cooperation are outlined in the areas of establishment, control, and settlement of disagreements. The multidistrict project must be initiated by resolutions as reflected in the minutes of each school board concerned. The school board of the fiscal district maintains control and ownership of any physical property and the control and administration of the project unless otherwise agreed by the school boards. Any disagreements that may arise from a multidistrict project are decided by the Florida Department of Education and the decision is binding on all school boards involved.

In 1988, in Florida, no separate program cost factors existed for multidistrict exceptional student education programs. The cost factors that existed for each exceptionality was the financial basis for the multidistrict program. The full-time equivalent reimbursement for transportation was also available to the district providing the transportation for the students in the multidistrict program. No additional funds were available from the Florida Education Finance Program for the host or participating districts.

In addition, there were no cost models for determining the costs of multidistrict programs. Developed in this study were cost models for the host and participating districts in order to generate program

cost data for multidistrict programs This was intended to allow school district staff to consider alternative delivery systems for exceptional students. Specific information on the two selected programs in the crown region of Florida was also generated Therefore, this study may provide assistance in determining accurate program cost factors for the Florida Education Finance Program.

Definition of Terms

Selected terms used in the study have specific meanings. These terms and meanings are as follows

Basic education is an instructional program which provides standard services to students in grades K-12 The term is synonymous with regular education.

Estimated costs are the projected costs for establishing a comparable replication of an educational program for use in evaluating alternative programs and planning future programs.

An exceptional education student is a student who requires special instruction or related services to take full advantage of educational programs because of physical, mental, emotional, social, or learning impairments.

Excess costs are those expenditures that are over and above the revenues generated by the program from the Florida Education Finance Program and federal sources.

The Florida Education Finance Program is the financial program established by the legislature of the state of Florida to provide educational opportunities to the students in the public schools in Florida.

A hearing impaired student is a student who has a hearing loss of 30 decibels or greater, pure tone average of 500, 1000, 2000 Hz, ANSI, unaided in the better ear.

A host school district is the local school district in which the staff is responsible for receiving students, administering a program, and serving as the fiscal agent for a multidistrict education program.

A multidistrict exceptional student education program is an exceptional student education program provided for students who reside in more than one school district.

A participating school district is a local school district in which the staff is sending students to a host school district to receive educational services.

A physically impaired student is a student who has a physically disabling condition or other health impairment which requires an adaptation to the student's school environment or curriculum.

Reattributed costs are indirect costs that are redistributed to existing educational programs when the number of programs are decreased.

Special education is an instructional program in which specialized services are provided to exceptional education students based on the student's individual needs.

A within the district program is an educational program provided only for students who are legal residents of the school district in which the program is offered.

Procedures

The determination of excess costs relating to multidistrict exceptional student education programs occurred in three stages. The methods of cost analysis were identified in the first stage. The second stage of the study was the development of resource cost models for identifying cost factors of multidistrict exceptional education programs. The final stage was the implementation of the resource cost models in host and participating school districts to determine if excess costs were involved in the multidistrict exceptional education programs.

The theories and concepts useful in establishing a foundation for the resource cost models were reviewed in the first stage. The literature in the realm of multidistrict programs was explored in the areas of historical development, organizational structure, services provided, advantages of participation, and methods of financing. The procedures in identifying the methods of cost analysis were derived from the research and literature in the field of educational finance. Cost accounting procedures recommended for public schools, previous

cost studies in exceptional education, and excess cost studies in educational programs were reviewed to develop a theoretical framework for the data collection.

The information obtained from the first stage was utilized in the development of data collection instruments. Separate resource cost models were developed for the host and participating school districts. The cost models contained the identification of expenditure components to include the human and material resources needed to implement the program, the development of a method for allocating district and school level indirect costs that reflected actual costs rather than attributive costs, the establishment of data collection methods, the determination of costs to develop a comparable replication of the program to enable a district to generate estimated costs for use in evaluating alternative programs, and the calculation of the revenues generated by the programs.

In the final stage, the host district and participating school districts in two multidistrict programs in Florida were selected to implement the cost models. Cost data were collected to determine if excess costs were incurred in the multidistrict exceptional education programs.

Study Design

This research design was descriptive. The study was designed to obtain information concerning the costs relating to multidistrict

exceptional education programs. Ary, Jacobs, and Razavieh (1979) defined descriptive research as a study "directed toward determining the nature of a situation as it exists at the time of the study" (p 295).

Sample

One host school district and all the participating districts in two multidistrict exceptional education programs were utilized in this research study. The districts selected were involved in the same multidistrict programs in the crown region of Florida. The host district selected had 22,774 student population and served 65.5 physically impaired students and 58.5 hearing impaired students. There were 10 participating districts in the multidistrict program with a range of student population from 1,475 through 24,735 (Florida Department of Education, 1986).

Instrumentation

Two sets of instruments were utilized in this study. Forms were developed to be used in the data collection. These forms were designed by the researcher using information from professional literature, A Manual: Financial and Program Cost Accounting and Reporting for Florida Schools (Florida Department of Education, 1983), and Financial Accounting for Local and State School Systems (United States Department of Education, 1980). These data collection forms were reviewed and deemed appropriate for their intended use by a panel

consisting of school district exceptional education directors and finance directors not involved in the study.

Another form was developed to be used in a structured interview with the exceptional education directors in the host and participating districts. The interview form was reviewed and deemed appropriate for its intended use by exceptional education directors involved in a multidistrict program but not involved in the study.

Data Collection and Treatment

Cost data were collected for the host and participating districts in the crown region of Florida for the 1985-86 school year for the hearing impaired and physically impaired students involved in a multidistrict program. Information was collected through the annual Cost Analysis for Florida Schools and Districts (Florida Department of Education, 1987a), Programs for Exceptional Students' Annual Report (Florida Department of Education, 1987b), the annual financial reports program cost reports for the selected host and participating districts, and the district and school level full-time equivalent (FTE) survey forms for the four FTE surveys in 1985-86.

The data collection and treatment procedures are listed for each of the three research questions that were answered by the study. To answer the first question the additional costs of a multidistrict program generated by the host district in comparison to a within the district program were examined. A cost per weighted FTE was

calculated for a multidistrict program and a within the district program to determine if additional costs were generated for the multidistrict programs. Data were collected on the expenditures incurred by the programs and on the revenues generated by the Florida Education Finance Program (FEFP) formula. The multidistrict program costs were then analyzed to determine the relationship to the Florida Education Finance Program (FEFP) generated support.

To answer the second question the costs of multidistrict programs generated by the participating districts were examined. Data were collected on the expenditures by district and the revenues generated by the FEFP formula. A total cost by district was calculated and then compared to the revenues to determine the relationship to the Florida Education Finance Program-generated support.

To answer the final question the estimated costs that would be generated for participating districts if a within the district program were established for their students were examined. A program was designed for each participating district and a student cost per weighted FTE was calculated for the within the district program and then compared to the revenues generated to determine the relation to the Florida Education Finance Program generated support. The information generated in question two was compared to the information calculated in question three to provide the participating districts

with alternative options for establishing programs for physically impaired and hearing impaired students.

Organization of the Research Report

The study is organized into five chapters. Chapter I contains the introduction to the research problem. A review of the literature on the topics of multidistrict programs, costs studies in exceptional education, and excess costs in educational programs is presented in Chapter II. Resource cost models are developed in Chapter III for the host and participating districts. Chapter IV includes a presentation and analysis of the data collected. The conclusions and recommendations of the study are delineated in Chapter V.

CHAPTER II
REVIEW OF RELATED LITERATURE

The review of the literature was classified into three areas related to the problem of the study. Multidistrict programs were investigated in regard to the following aspects: historical development, organizational structure, services provided, advantages of participation, and methods of financing. Cost studies in exceptional education and studies on excess costs in educational programs were also reviewed.

Historical Development of Multidistrict Programs

The multidistrict program is an old concept that developed sporadically throughout the nation (Gearhart, 1974). "Most states have or at one time had some type of intermediate unit. In some form the intermediate unit has existed nearly as long as this country has had public schools" (Isenberg, 1979a, p. 139). Legislative encouragement was reflected in a 1795 New York law relative to functions commonly ascribed to an intermediate unit. Town commissioners were delegated the power to apportion state school money among several districts, to confer with school district trustees concerning qualifications of teachers, and to supervise the educational program. The law existed for 5 years but was not extended (Knezevich, 1974).

In 1948, Butterworth reported that 35 states had some type of intermediate school district in various stages of development. Many multidistrict programs began as a county school office or a county superintendent of schools when most school districts were small. Supervision and guidance to small school attendance units and to the very small administrative districts were provided by the county school district personnel in the late 19th and early 20th centuries (Isenberg, 1979b).

In 1947, Iowa legislation enabled county school boards to merge two or more adjacent county intermediate units, subject to approval of the state board of education. But it was 1966 before the first two county units merged to form the first multidistrict intermediate unit in that state (Knezevich, 1974).

In New York, as school boards realized that they could not provide effective service for all students, legislation that created intermediate or regional districts to provide specialized services was supported. The legislature authorized the formation of the Boards of Cooperative Educational Services (BOCES) in 1948. The BOCES were intended to be a temporary system until a more complex system could be developed to cover the entire state (Coladis & Foster, 1974) Shared services were provided through the BOCES to two or more school districts upon request when the districts were unable to provide such services economically or efficiently. All member districts shared in the administrative costs but the size of the administrative budget was

limited to a set percentage of the total service budget. Service was provided through the BOCES to the individual districts by annual contracts that specified both the services to be provided and the cost to the district. New York's BOCES system has been expanded to serve over 30,000 handicapped children whose disabilities range from mild to severe (Cox, 1981/1982; Gearhart, 1974; Nyquist, 1973).

Enabling legislation for special education programs was enacted in Kansas in 1949. However, because the suggested minimum district enrollments to provide effective special education programs exceeded that of most Kansas school districts, many students remained unserved. It was not until 1966 that leaders of small districts began to join together to provide services to special education students at a regional level (Kirmer, Lockwood, Mickler, & Sweeney, 1984).

In 1957, the need for a larger educational unit to serve handicapped students was recognized by the school districts in Saint Louis County, Missouri. A special school district was created that encompassed the 23 public school districts within the county. In 1972, legislation extended the special school district concept to all counties of the state. The Saint Louis Special School District included a population of over one million in the predominantly residential suburban area (Gearhart, 1974).

Multidistrict educational endeavors did not become effective, for the most part, until the 1960s (Gearhart, 1974). Squires (1973/1974)

reported that in at least 39 states there were multidistrict cooperative programs which provided special education services. Almost two-thirds of these programs have been started since 1965. According to Gearhart (1974), multidistrict programs developed rapidly after the mid-1960s.

In 1962, the Michigan legislature required the consolidation of single county school districts with school membership of fewer than 5,000 students (Knezevich, 1974). Fifteen multidistrict units were developed with most units including at least two counties (Stephens, 1975).

Colorado voters, in 1965, abolished the county superintendency and established boards of cooperative service. Under this permissive legislation, two or more local educational agencies were permitted to form a multidistrict program (Knezevich, 1974; Stephens, 1975).

Also, in 1965, by the authorization of the Texas legislature, 20 educational service centers were established to provide a local base for multidistrict educational planning, to operate a regional media component, and to encourage the development of supplementary educational services and centers (Thomas, 1980). Membership was voluntary by action of the local district leaders.

The cooperative educational service agencies were initiated in Wisconsin in 1965. Nineteen regional service agencies were established which included all of the state. These agencies ranged in

pupil population from 18,300 to 193,800. The number of local districts in each region varied from 14 through 63. The cooperative educational service agency policy body was allowed to establish contracts with local school district boards, county boards of supervisors, and other cooperative educational service agency boards for various programs and services (Gearhart, 1974).

The intermediate school districts in Pennsylvania were reorganized in 1965. A proposal by the Pennsylvania State Board of Education included 25 intermediate units. The cities of Philadelphia and Pittsburgh were considered as 2 of the 25 units (Knezevich, 1974).

In 1965, the Nebraska legislature created 19 new multicounty educational service units which included the entire state. At that time there were 1,820 school districts in Nebraska, more than any other state and more than 23 southeastern states combined. A strong intermediate unit was needed to provide supplementary educational services for the small local school districts. The leaders of the school districts were not required to participate in the educational service units and some exempted themselves from participation (Cushman & Wangberg, 1970, Knezevich, 1974, Stephens, 1975).

Legislation was enacted in the state of Washington requiring the state board of education to develop a statewide plan for reorganizing intermediate units in 1965. Fourteen new intermediate units were created to provide statewide education services. The number of units

was reduced to 12 which became operational in 1972 (Knezevich, 1974; Stephens, 1975).

The regional educational service agency (RESA) was created by the Iowa legislature in 1965 on a permissive basis. In 1974, the legislature enacted mandatory legislation creating 15 area education agencies (Stephens, 1975).

A statewide network of cooperative educational service agencies (CESA) was established in Georgia during 1972. All local school districts in the CESA were eligible for membership but participation was not required. Each unit was administered by a board of control comprised of one representative from each participating local school district (Stephens, 1975)

Organizational Structure of Multidistrict Programs

Lord and Isenberg (1964) stated that even with school district reorganization in most school systems the leaders are not able to provide specialized educational service. The greatest barrier to expanding and extending specialized services seemed to be the unwillingness of those working at all levels in state school systems to acknowledge that the traditional single school district approach was not effective (Lord & Isenberg, 1964).

One method for providing specialized services proposed by Lord and Isenberg (1964) is through contracting for specific service. Small district leaders can contract with leaders of a nearby larger

district for specialized service or smaller district staffs can work together and select one district staff to establish and operate a program with which each district staff can contract and thus support the multidistrict program. One advantage was that it is relatively easy. Lord and Isenberg (1964) stated that the disadvantages are that it may be a temporary arrangement with district staff renewing contracts on an annual basis, long-range planning is discouraged, and the host district staff has a lot of coordinating responsibility.

Another alternative suggested by Lord and Isenberg (1964) was for the state education agency to provide direct services where local district personnel are unable to provide specialized services. This approach may be more often utilized for film libraries, vocational and technical education programs, and educational television than for services for exceptional students. One advantage of this type of organizational arrangement is that specialized educational services were often expensive and it may be easier to secure funds by using a statewide approach. Some of the disadvantages are that services may not be available on a crisis basis, the state policy-makers must treat all areas of the state equitably, and financing is directly tied to legislative action or inaction (Lord & Isenberg, 1964).

The third alternative advocated by Lord and Isenberg (1964) was the special school district. The special school district has definite boundaries, a board of education, tax-levying authority, and is

entitled to direct state support. Services are provided through the larger multidistrict program to the total area rather than to local individual school districts. One advantage of the special school district is that the staff is able to provide certain types of services which local district staff can not provide on an individual basis. This allows the local district to be freed of financial and administrative responsibility of the service area. The greatest problem of the special district approach is that it is limited in its range of services. It can not elect to provide different functions at a later time. It is typical to create a new special district when a new function is created. The new district may or may not serve the same area as other special districts (Lord & Isaacberg, 1964).

Lord and Isaacberg (1964) indicated that the intermediate administrative unit or school district is a type of agency which can provide needed specialized services. The intermediate unit is the middle level of a three-tiered system of organization. The local districts are at one level and the state department at another with the intermediate agency in between. One major advantage of the intermediate unit is that it is in the direct line of the state school organization. Also, the geographic area is of sufficient size to permit the provision of supplementary services that can not be provided by local districts. This unit can easily change to new circumstances and can provide additional services (Lord & Isaacberg, 1964).

The success of any regional program depends on the organizational framework under which it developed. Lord and Isenberg (1964) proposed that the general characteristics of a multidistrict program that assure efficient operation were as follows

1. Broad and comprehensive responsibility for both elementary and secondary education and their specialized aspects.
2. Broad and generally oriented professional administration.
3. An area of operation large enough to permit the efficient development of most services local school systems cannot provide for themselves.
4. Adequate and dependable financial support with some degree of flexibility in its use.
5. The ability to adapt programs and directions as circumstances and needs change.
6. A sufficient stability to assure the continuation of service in spite of changes and realignments among participating local school systems.
7. A responsiveness to the needs and desires of local school systems as seen from the local level.
8. The ability to secure a staff sufficiently competent to have something substantially worthwhile to offer participating districts. (p. 141)

Meesecker (1970) stated that "sharing services is not a new concept. It described an arrangement whereby two or more districts or schools work together cooperatively to provide a service that one of the districts or schools could not or would not provide alone" (p. 20).

Cushman and Wangberg (1970) defined an intermediate unit as a voluntary cooperation of many local school districts. They called the process rural shared services. Shared services are activities conducted cooperatively by two or more separate school districts. The local districts to which they were referring were generally too small for the staffs to provide the programs alone.

Patterson (1971) proposed that

> there is not and should not be one model for cooperation. Rather, the organizational structure, purposes and operational procedures of a collective group are likely to be more relevant and effective when evolved from the peculiar characteristics, needs and aspirations of the participants. (p. 20)

Todd (1971) indicated that the region served by a multidistrict educational program could be of any size but was generally composed of contiguous school districts which have common needs. Todd also recommended that boards consisting of district superintendents and representatives of participating colleges and state departments of education administer the multidistrict programs.

Achilles, Hughes, and Leonard (1974) stated that regional agencies occurred either between the local education agency and the state education agency or as a creation of the local education agency. Achilles et al. emphasized that

> The Regional Education Service Agency (RESA) is a confederation of several school districts. In the Region (Appalachia) this almost always means that it is a multicounty organization, since most districts follow county lines.
>
> A RESA is not a superstructure imposed on its constituent school districts; it is a creation of the participating school districts. The individual districts retain autonomy and local control. They, not the RESA, make the decision as to what programs the RESA will engage in. Each district is also free to participate in each of the programs. (p. 217)

Stephens (1977) identified three basic forms of multidistrict programs.

1. A legally constituted unit of school government sitting between the state education agency and a collection of local districts. The governance, organization, and program feature of this form of regionalism tend to be relatively structured in the enabling legislation and/or the administrative rules and regulations of the state education agency.
2. Branches of the state education agency. In these decentralized plans, the regional units are most typically staffed exclusively by employees of the state education agency who perform services determined largely by the state unit.
3. An educational cooperative by two or more local education agencies. In these arrangements, the participating units in the consortium typically have complete or substantial discretion to establish the governance, organization and program features of the cooperative. (p. 3)

Conners (1980) suggested that regional programs could be organized in three ways: the multi-system model, the single-system model, and the private school model. In the multi-system model, districts join with other districts to provide specialized services. The controlling body is a committee comprised of members from participating school districts. A director is selected that will be responsible for the overall program. Conners (1980) pointed out that the multi-system model was the most practical, cost efficient, and effective model.

The single-system model operates as a regional program but is controlled by a single school district policy board. The students from the participating districts are sent to the host district. There are two major organizational variations of this model. In the first variation, program is controlled by the host district staff and

absorbs the students from the other districts. Generally, no attempt is made to include the participating district personnel in establishing policies. The alternative in the single-system model provides for the use of a steering committee to aid in the administration of the regional program. The advantage of this model was that it represents an attempt to deal with the concerns of the other participating school district personnel.

The private school model is usually structured the same way as the multi-system model. Service on a per student basis is purchased by the public school district leader from the private school staff.

Estes (1981) identified three categories of regional education service agencies similar to Stephens (1977). The categories Estes identified were

1. Special District Education Agency - a legally constituted school government sitting between the state education agency and a collection of local agencies.
2. Regionalized State Education Agencies/Educational Service Agencies - a regional branch of the state education agency; and
3. Cooperative Educational Service Agency - a loose consortium of local education agencies. (pp. 351-353)

Estes (1981) reported that "the primary mission of each of the three types of network is improving the quality of education generally or improving the quality of specific programming for special target populations" (p. 352).

Poole (1981) reported that, in New Jersey, the legislative authority created a number of distinct organizational structures at

the intermediate level. In New Jersey, the response to a statewide need was not with a single comprehensive plan. Two types of multidistrict arrangements were available. The informal type of arrangement consisted of school districts in which the staff chose to cooperate in providing services to children. A director of special education employed by the council which consisted of the superintendents in the cooperating school districts managed the cooperative. Classes were developed in the schools within the cooperating school districts.

The formal arrangement was a county special services school district in which the students with low incidence handicapping conditions were educated. This special services school district was operated under the direction of a legislative appointed board of education. An advisory board of parents and professionals also was formed to periodically meet with the board. The informal arrangement was being used to educate less severely handicapped while the formal arrangement in New Jersey was used to serve the very low incidence handicapped student (Poole, 1981).

Helge (1984b) completed a report on the review of studies of the National Rural Project to determine the impact of educational collaboratives on rural special education. Helge (1984b) pointed out that there were four basic organizational arrangements. They were

state-mandated special district systems and education service agencies, cooperatives formed by local district initiation, regional or decentralized state education agency systems, and other inter organization structures. Helge stated that collaboratives were best categorized by their functions because the terminology used by various states was inconsistent.

Services Provided Through Multidistrict Programs

Knezevich (1974) reported that the "general or fundamental purpose of the intermediate or regional service unit should be to provide to two or more local districts educational services that could not be provided by such districts in an efficient manner or at a reasonable cost per pupil" (p. 240). The types of services provided would be dependent on the services most needed in each area of the nation. Knezevich (1974) suggested 24 possible services that could be provided on a multidistrict basis. Among the services suggested were services to exceptional children.

Heesacker and Jongeward's study (cited in Cushman & Waugberg, 1970) identified 215 projects that utilized the shared services concept. The types of multidistrict services included

> development of programmed instruction kits, amplified telephones, dial access retrieval systems, flexible and/or modular scheduling and able student college seminars. These kinds of services were of assistance to migrant youth and handicapped children as well as regular pupils through cooperative purchase of supplies, inservice training of teachers, preparation of media and materials, utilization of teacher's aides, remedial reading programs,

> health and guidance services, programs for the gifted, standardized testing, computer utilization, vocational counseling, bus scheduling, and even mobile vocational programs. (pp. 197-198)

Elliott (1970) cited a three-county cooperative in Tennessee where additional services had been provided that could not have been provided by the individual district staff. Some of the services that were provided were

1. Driver's education (which had been available to two and one-half times as many students at two-thirds the original cost per pupil);
2. Vocational education programs (specialized teaching personnel were shared),
3. A laser linkup that beams 32 video lessons into the district's classrooms;
4. A kindergarten program for preschoolers; and
5. Diagnostic and therapeutic services for speech, sight, hearing, and orthopedic deficiencies. (p. 93)

Pine (1972) proposed that especially for the small and medium-sized districts that there was no end to the way services could be shared. Pine indicated that generally shared services are confined to supplementary areas, while basic programs and buildings remain the responsibility of local districts. Some of the activities that Pine reported as existing in effective multidistrict programs were "(a) programs for reading improvement, (b) handicapped children, (c) migrant youth, (d) early childhood education, (e) guidance services, (f) mobile vocational education, (g) vocational counseling, (h) educational television, (i) standardized testing, (j) audio and materials preparation, (k) personnel recruitment, (l) computer

utilization, (m) cooperative purchasing, (n) bus scheduling, and (o) sharing of administrative staff" (p. 26).

Heller, Kohl, and Lustheus (1972) pointed out that several emerging trends in both society and education have created problems for which various forms of multidistrict programs could provide unique solutions. School administrators and school board members seeking new ways to implement the expanding demand for educational services plus the rising cost of providing additional services and the difficulty in acquiring resources to pay for existing education services have led educators to consider multidistrict programs as an alternative approach.

Kirmer et al. (1984) reported that leaders of 12 small school districts in a four county area formed a regional program in 1967. The service goals were as follows:

1. To develop an area-wide program of special educational services by providing the specialized administrative, supervisory, and resource personnel and equipment to support and encourage the growth of programs in local districts,
2. To develop an organizational framework allowing a group of relatively small school districts located in a rural area to work together to provide certain education services which they are unable to provide seperately,
3. To develop a comprehensive program of inservice training to support classroom teachers and assist them in developing and improving their skills in working with children,
4. To provide a program of information and education to other adults interested in children with learning problems, and
5. To develop a diagnostic and remedial center to service and support special education programs in the cooperative district. (p. 307)

Mack and Stephens (cited in Helge, 1984b) reported that in multidistrict programs, special education was the universal priority of the collaboratives. Over one-third of the expenditures of all of the systems that were studied were related to special education. In addition, special education staff constituted nearly one-half of the total staff for all agencies.

Helge (1984b) reported that the organizational structure played a major role in determining the types and methods of services. In state-established special districts the greatest range of services were provided and the largest staffs were employed. Decentralized state education agency personnel generally provided no direct services to children. In voluntary multidistrict programs a combination of shared local programs and directly sponsored services were used.

Advantages of Participation in Multidistrict Programs

Messacker and Jongeward (cited in Cushman & Wangberg, 1970) interviewed 120 persons with experience in multidistrict programs. They concluded that multidistrict programs "tend to involve the isolated administrator, to provide new solutions to existing problems, to create a renewed interest in education among the citizens of the community, and to provide needed educational services for rural youth with no loss of autonomy to the local school district" (p. 198).

Elliott (1970) reported that multidistrict programs have potential advantages that satisfy the following basic educational

goals: "(a) responsiveness of the educational unit to the community, (b) economy of operation, (c) rigorous program planning and evaluation, (d) administrative support of innovations, (e) cooperation among educators at all levels of service; (f) institutionalization of rational change process; and (g) involvement of the educator in social planning" (p. 94). Elliott (1970) suggested that financial advantages could be obtained through large system central purchasing, central accounting, cooperative utilization of specialized personnel, and sharing of sophisticated educational hardware and instructional programs while the local school board maintained its ability to respond to the community. Elliott proposed that the "educational cooperative can provide some of the advantages of school consolidation via functional relationships among school districts" (p. 95).

Todd (1971) stated that "sharing services through educational cooperatives enables the isolated rural school to offer an expanded curriculum and quality education" (p. 384). Todd emphasized that even though the number of school districts had decreased, that in many small districts there was still not the resources and planning capabilities to provide specialized services. Todd proposed that multidistrict programs were a viable substitute for consolidation whenever the merger of districts was not politically feasible. Two important advantages of multidistrict programs proposed by Todd (1971) were (a) the local district leaders maintain control and (b) the

curricula are supplemented through the use of shared facilities or equipment that are too expensive for small school district leaders to purchase.

There are a number of incentives for school district policy-makers to participate in multidistrict activities as outlined by Todd (1971). They are as follows:

> 1. The cooperative provides a new organization unhampered by tradition and institutionalized patterns of behavior.
> 2. The reinforcement of other colleagues joined together in risk-taking innovation can do much . . . to reduce the loneliness (of the superintendency).
> 3. The stimulation of colleagues and cross-fertilization of ideas natural to cooperative actions have potential for improved educational practice.
> 4. The cooperative makes possible economics of large scale operation.
> 5. The cooperative makes possible a new mix of financial resources by attracting support not available to one district.
> 6. The cooperative reinforces the concept of local control. (p. 384)

Pine (1972) stated that many districts are still too small for comprehensive services to be provided. Pine proposed that if small district staffs pool their resources, they can establish programs that are high in quality. The shared services concept could be a solution to the problem of equalizing educational opportunity. Pine indicated that shared services can help administrators in at least two important ways: "(a) it is easier for a cooperative to attract real expertise and assistance, and (b) there is less risk to each individual district when several districts take part in a pilot project" (p. 54). Pine (1972) reported that saving money was not usually the main reason

district leaders decided to cooperate. Additional services usually cost the district leaders more but not as much as if they had tried to provide the services on their own.

Gearhart (1974) stated that multidistrict programs have gained wide acceptance in the past years. Gearhart identified a number of characteristics and/or advantages of multidistrict educational programs. Those that have specific significance to exceptional education planning and implementation are as follows:

1. For smaller school districts the cooperative may represent the most feasible way to utilize federal grant monies, which often come in too small amounts to use effectively, except as combined with funds of other districts. The cooperative district will often employ a federal aid administrator who relieves the local district of the time consuming task of preparing federal grant proposals, handling grant monies, etc.
2. Larger units may make it possible to employ specialized personnel where such employment would not be feasible in smaller units.
3. Services for handicapped and gifted children may be fiscally or programatically impractical, especially for the low incidence handicapping conditions, without a very large student population base.
4. The local school board tends to be kept very busy with the routine facets of the general school program. A cooperative district with its own school board can focus on the more specialized educational concerns of the cooperative, usually those which tend to take unusually large amounts of time. (pp. 83-84)

Achilles, Hughes, and Leonard (1974) stated that "the Educational Cooperative or Regional Education Service Agency provided much of the economy and service capability of large districts while allowing for flexibility, local control, and direction of individual districts or schools" (p. 271). They further stated:

> cooperation allows and helps schools respond rapidly to social demands, marginal or socially relevant programs can be experimented with. High risk ventures are spread over several school districts, and there is less criticism if the program does not prove effective during its first few years. Cooperation allows risk capital to be generated by relatively small contributions from many sources. (p. 220)

Estes (1981) supported the theory that suburban and rural districts could benefit from the services and programs provided through a multidistrict program. However, Estes indicated that the urban district policy-makers may have a somewhat different view of multidistrict efforts. Estes proposed that there were three basic concerns in regard to multidistrict programs for urban districts. The three categories of concern were governance, autonomy, and the need for service. In urban districts, the potential that the multidistrict program could affect the governance of the district is extremely limited but the multidistrict program must have input from the urban district leaders in order to survive. The urban school district has great political autonomy and can operate as a closed system, excluding the multidistrict programs entirely. Only when direct service to students is involved do the two systems share a common output. Since, in the large urban districts, there is a large quantity of resources within the district, the need to obtain service outside the district is lessened.

Estes (1981) stated that because of diminishing resources in education, it was important not to fragment educational planning by

stopping at school district boundaries. Leaders of the public agencies and institutions must work together to solve the emerging complex problems of tomorrow. He emphasized his opinion by making the following statement:

> The cooperative efforts of regional education service agencies (RESA) provide a mechanism for reducing inequalities among school districts. Reduction of inequalities is realized through (1) maximizing resource efficiency from those elements already existing in the districts, and (2) providing those resource elements not existing within districts prior to the establishment of the cooperative relationship. (p. 351)

Poole (1981) offered the following advantages of multidistrict arrangements:

1. Enables local districts to have easily accessible supplemental and supportive services,
2. Contributes to development and/or provision of legislatively mandated programs and services that local districts may be unable to provide;
3. Contributes to the equalization of educational opportunity for all,
4. Leads to greater cost effectiveness in delivery of programs and services,
5. Provides advantages of larger districts for specific services yet maintains advantages of smaller districts for basic programs;
6. Encourages cooperation between urban, suburban, and rural interests in solving common educational issues; and
7. Facilitates meaningful local involvement in state and regional planning and decision making. (p. 4)

Helge (1984b) cited that a number of advantages of multidistrict programs were identified in the National Rural Project Research. Helge summarized them as follows:

1. Improved cost efficiency ratios,
2. maintenance of a sense of local autonomy,
3. facilitation of compliance with Federal Special Education mandates,
4. access to program and service specialists,
5. facilitation of teacher retention,
6. enhancement of parent involvement,
7. shared information for better planning,
8. non-threatening information exchange,
9. benefits of temporary system,
10. assessment and reallocation of resources, and
11. by products of conflict resolution. (pp. 20-24)

These advantages provide the basic reasons multidistrict programs are formed thereby enabling local districts to provide a wider range of services.

Methods of Financing Multidistrict Programs

Nyquist (1973) suggested several possible alternative approaches to financing regional districts.

1. Budget for the metropolitan regional districts can be provided by the state--a fully funded approach which would give the state considerable control.
2. The metropolitan region can be given taxing powers so that it can finance its own programs out of whatever revenues it can raise. There is, of course, great resistance at the present to creating new taxing authorities, hence this approach would not be easily accepted in most parts of the country.
3. The component districts can buy services from the metropolitan region. As an inducement to use metropolitan services whenever it is in the best interest of education to do so, the state can match local contributions on some appropriate formula. (p. 28)

In 1975, Stephens studied 12 states where multidistrict education service agencies had been established on a permissive or mandatory basis. In each state different rules and regulations had been

provided for the financial basis of their multidistrict programs. Each of the multidistrict education service agencies were studied with respect to six financial characteristics: possession of taxing authority, direct state appropriations, permission to enter into service contracts, eligibility to receive federal funds, authority to hold title to real property, and required budget reviews by the local educational agency.

As of 1975, in Georgia, the multidistrict agency boards received monies from the state, however, the major source of funds was from service contracts from participating local school district boards. They were eligible to receive state and federal funds but did not have fiscal taxing authority nor could they hold title to real property (Stephens, 1975).

In Iowa, the local district leaders were required to pay cash for services they received. Each district staff could add to its annual allowable growth in expenditures an amount equal to the cost per student in multidistrict programs for exceptional education support services. The programs were also eligible to receive federal monies (Stephens, 1975).

Stephens (1975) reported that Nebraska's multidistrict unit policy boards could levy a property tax not to exceed one mill. However, the majority of multidistrict unit boards received most of their financial support from contractual arrangements with

participating districts and federal monies. The unit boards could acquire and hold title to real property.

The multidistrict programs in Pennsylvania received state appropriations based on a weighted formula that included an enrollment factor and a real value factor. The host district policy-makers could also assess the districts a fee for operating expenses and receive federal monies. The multidistrict program leaders had no taxing authority and were unable to hold title to real property (Stephens, 1975).

Local district contracts and federal monies were the major source of funds for the multidistrict program centers in Texas. The center boards did not have taxing authority but could hold title to real property (Stephens, 1975).

In Washington, the financial support for the multidistrict units was derived from four main sources: (a) service contracts, (b) county appropriations, (c) state appropriations, and (d) federal grants. Their budgets were subject to review by the state superintendent. The multidistrict school district boards did not have taxing authority but could hold title to real property (Stephens, 1975).

State appropriations, federal funds, and local service contracts were the basis of funds for the multidistrict educational service agency boards in West Virginia. Stephens (1975) also reported that they had no taxing authority.

The multidistrict educational service agency boards in Wisconsin received minimal state support. They had no taxing authority and could not own real property. Their primary source of funds was local contracts and federal funds (Stephens, 1975).

In Colorado, Stephens (1975) reported that the multidistrict program leaders had no taxing authority. They were eligible to receive state appropriations but the programs received additional funds from service contracts and federal sources. They could hold title to real property.

The multidistrict program leaders in Michigan had limited categorical fiscal authority to levy taxes for special education Stephens (1975) also found that they received funds from state and federal sources. In New York, the BOCES had no taxing authority but they received state funds for special shared services. A BOCES could enter into service contracts with local districts. Each participating district was assessed a pro rata amount to cover administrative costs. Federal funds were a source of financing for the BOCES. They could hold title to real property and could construct physical facilities subject to approval by public referendum (Stephens, 1975).

Direct state appropriations were provided to the multidistrict programs in Oregon. The program leaders received monies through local service contracts and federal funds and they did not have local taxing authority (Stephens, 1975).

Connors (1980) stated that "the mode of funding must be consistent and congruent with the administration style of the regional program" (p. 6). Connors reported that there were three basic funding formats per pupil funding, percent share funding, and combination funding. Connors reported that the per pupil funding had two major disadvantages. The first was that if the multidistrict program was not operating at maximum pupil enrollment, then revenue inequities were created among those school districts utilizing resources. Second, the per pupil funding structure prevented the multidistrict program leaders from expanding its service to more than its maximum pupil enrollment.

The percent share funding method was more complicated to administer but could be more equitable. Leaders of each district with students attending the multidistrict program would contribute its percentage of each days' expenditure when its students were enrolled. Leaders of each district paid for their share of the total cost and the share would be adjusted daily depending on the student membership. The advantage of this method of funding was that district leaders paid for only the services that were utilized and they did not have to absorb the loss due to varying enrollment (Connor, 1980).

Conner (1980) pointed out that the combination funding combined those costs which were constant and calculated on a percent share funding basis with those that vary with pupil enrollment and were

calculated on a per pupil funding basis. This method required additional clerical time because of the double calculations.

Achilles, Hughes, and Leonard (1974) emphasized that

> although the literature often mentions the cost effectiveness or economic efficiency of RESAs, examples of hard data to support such contentions are hard to find. Few cost-related evaluations of cooperative programs or of the agencies themselves are readily available. . . . By cooperating, districts obtain programs which they previously did not have; expansion does not reduce operating budgets. (pp. 219-220)

Achilles et al (1974) acknowledged that the major continuing concern of multidistrict programs was financing. If the program leaders did not receive some state funding, then the constant attempts to obtain funds reduced the energy for providing services.

Cost Studies in Exceptional Education

Rossmiller et al. (1970) were the forerunners in the field of exceptional education cost studies. In their National Education Finance Project satellite study they identified the configurations of human and material resources utilized in exemplary exceptional education programs, ascertained the cost differentials associated with special programs relative to regular programs, and projected the costs of educating all exceptional children in 1980. The researchers collected cost and program data from 24 school districts in five states which was the first such attempt on a national basis. Cost indices were determined for 10 categories of exceptional education programs. Rossmiller et al. defined cost index as

> the relationship between the expenditure per pupil in a school district's regular educational program and the expenditure per pupil in a special education program. For example, a cost index of 2.0 indicates that a district is spending twice as much per pupil in a special program as it spends in its regular program. (pp. 113-115)

Rossmiller et al. (1970) reported that a cost index had the "advantage of permitting comparisons to be made among and between districts and within the district over time" (p. 115), whereas the per pupil expenditure was accurate for a particular time and place. The high, median, and low program cost indices were reported by Rossmiller et al. A wide variation existed within programs and index levels. Rossmiller et al. stated, "we believe that the median cost index programs afford the soundest basis for fiscal planning and forecasting" (p. 115). The researchers emphasized that the lowest cost index programs did not always exhibit exemplary program characteristics and the highest cost indices were associated with new and developing programs or the program reflected a very low pupil-teacher ratio.

Rossmiller et al. (1970) examined the expenditure components which were required to support regular and exceptional education programs. The components included were administrative, clerical and secretarial, food services, fringe benefits for certificated staff, fringe benefits for non-certificated staff, guidance and counseling, health services, instructional supplies and equipment, operation and maintenance, other costs of current operation, other supportive

services, teachers, teacher aides, capital outlay, debt services, and transportation (pp. 49-53).

The expenditure for salaries of teachers and teacher aides represented the largest components of expenditure for regular and exceptional education programs. Rossmiller et al. (1970) also indicated that transportation in some categories was very high and contributed significantly to cost difference.

Bentley (1970), in a related study, examined the nature and consistency of the cost differentials which existed between regular and exceptional education programs for 14 school districts included in the Rossmiller et al. (1970) study. The cost factors which contributed most significantly to the cost differential were administration, fringe benefits, instructional supplies and equipment, operation and maintenance, supportive services, teachers, teacher aides, and transportation. Clerical and secretarial services and food services did not contribute significantly to the cost differentials.

Each cost factor varied widely among programs and districts. Bentley (1970) reported that there was substantial consistency only in the cost indices in educable and trainable mentally retarded programs. Except for these two categories, there was no relationship found between the level of spending in the district for regular and exceptional education programs.

Bentley (1970) also postulated that a relationship existed between expenditures per pupil in special education programs and the

type of support provided by the state. He recommended further research in this area should be considered in view of the smallness of the sample involved in the study.

In a study of educable mentally retarded programs in Florida, Singletary (1973) identified the factors associated with the variation in costs for the delivery of instruction. Six systems were utilized in the sample with two districts in each size category of small, medium, and large. The 12 cost categories that were investigated were teacher salary, support staff salary, salary for aides for instruction, salary payment to clerks and other non-academic aides for instruction, administration and general control, instructional supplies and equipment, other auxiliary services, fixed charges, community services, and total current operating expenses.

The conclusions of the study were as follows.

1. In large versus medium districts, the more significant variable which related to variance in cost indices for elementary EMR programs were number of special education teachers employed in grades 1-6 and the prorated number of employees for operation and plant maintenance. For secondary programs, the significant variables were prorated number of employees for food service and the amount expended for community services.
2. In large versus small districts, the more important variable associated with variance in elementary cost indices were the number of teachers employed in elementary EMR programs and the pupil-teacher ratio in elementary special education. Secondary level program variables of significance were the prorated number of employees for food services and prorated number of curriculum and/or research workers.
3. In medium versus small districts, prominent elementary program variables indicative of variance

> were salary for aides and amount prorated for transportation. The high school program variables were the number of food services employees and the pupil-teacher ratio in secondary EMR units. (pp. ix-x)

Sorensen (1973) studied seven school systems in Illinois to determine the relationship between the cost of regular and exceptional education programs. This study included three large school districts and four multidistrict joint agreements. The focal point of the study was the cost incurred in direct services for special classes, support services for the special program, and administrative and operational expenses which apply to all students in the system. Capital outlay and transportation were not included in the expenditures analyzed. Wide variations were found in the gross per pupil costs within and between specific programs. In all 56 programs, the average per pupil cost for exceptional education exceeded the average per pupil cost for regular education with the program means ranging from 1.51 to 3.95. The per pupil expenditure for teachers' salaries and the extent of support services were the major variables that influenced the cost differences.

In a study by Clemmons (1974), the cost on a per pupil basis was calculated for seven categories of exceptional education and regular education programs in six Minnesota school districts. In addition, Clemmons calculated the costs of five delivery systems for different exceptionalities. Wide variations in expenditures existed among all five delivery systems.

Clemmons (1974) found that cost variations were influenced by certain cost factors. The sensitive cost factors Clemmons identified were administrative salaries, teachers' salaries and benefits, teacher aides' salaries, equipment and supplies, guidance and counseling salaries, salaries of other instructional support personnel, operation and maintenance of facilities, and health services. Clerical and secretarial services, food services, noncertified staff salary and benefits, and salaries of other noncertified personnel were the only expenditure components that did not contribute significantly to the cost differential. These findings were consistent with those of Rossmiller et al. (1970) and Bentley (1970).

Cambron (1976) developed a cost model to determine the current operating cost and equipment used in five alternative instructional delivery systems for exceptional programs. The instructional delivery systems analyzed were the regular classroom with consultation, the regular class with supplemental instruction, the regular classroom with resource room, the part-time special class, and the full-time special class.

The development of the model emphasized four aspects: identification of expenditure elements, determination of allocation procedure, description of data collection methods, and derivation of costs. The model as developed by Cambron (1976) yielded the following data:

1. Cost per full time equivalent (FTE) pupil per delivery system by school level and district level;
2. Total cost of each delivery system by school level;
3. Cost per FTE pupil by exceptionality;
4. Number of FTE pupils served by each delivery system (average FTE enrollment and total district FTE enrollment); and
5. Number of pupils served by each delivery system (average pupil membership and total district membership). (p. 125)

The first attempt to provide detailed cost information about the educational services for handicapped students in a major urban school system was completed by Marriner (1977). The study was based on the costs of the New York City school system in November, 1975. Marriner stated that "many of the traditional assumptions used in estimating costs for regular programs do not apply to special education" (p. 84).

The total cost of educating a handicapped student in New York City was based on cost factors shared equally by all students in the school districts and on the cost factors provided specifically to handicapped students. The two factors used to analyze and summarize the data were type of program delivery and the severity of the handicapping condition (Marriner, 1977).

The functional cost components in the Marriner (1977) study that were included for services provided specifically to handicapped students were central management, bureau management (which included administration and clerical and secretarial services), instructional services (which included supervisors, teachers, and teacher aides), instructional support (which included supplies and equipment, guidance

counselors, other professionals, diagnostic/clinical and speech services), and institutional operations (which included leasing, fringe benefits, pensions, Title VI, Title I, and transportation). In his study, Marriner (1977) reported that the average cost for a handicapped student was $5,897. However, the average cost was not not indicative of the wide variation among the programs. The relative cost indices ranged from 1.06 for itinerant speech services through 6.13 for the Center for Multiply Handicapped Children (Marriner, 1977).

Marriner (1977) considered the use of an incremental or marginal cost for educating the unserved handicapped student. The incremental cost per student was the additional expense of educating another student in an existing program. The size of the incremental cost depended on the number of students to be added to a program. A few students could be added without incurring additional instructional expense, a larger number of students added may incur additional expenses directly related to establishing new classes and even greater number of students added may require, in addition to classroom services, a wide range of services such as more supervisors, clerical staff, school psychologists, and building renovations (Marriner, 1977).

Hartman (1981a) conducted a study to develop a method to estimate the costs of providing appropriate educational services for all

school-aged handicapped students in 1980-81. A resource-cost model approach was utilized to provide cost estimates. Hartman's approach was based on a mathematical formulation of the relationships among students, programs, resources, and the decision rule in the exceptional education process. Data were collected from 26 states. Each variable in the model was calculated on the basis of three estimations: most probable, low alternative, and high alternative. Costs of certain related services were also estimated.

The most probable estimate of exceptional education costs in 1980-81 was $7,926 billion while the low alternative was $2,682 billion and the high alternative was $19,856 billion. Hartman (1981a) emphasized that "these extremes indicated the importance and critical nature of the programmatic decisions and assumptions underlying the cost estimates" (p. 38).

A series of sensitivity analyses were conducted to examine each variable in relation to the total cost estimates. Hartman (1981a) concluded that the incidence rate for the handicapping condition and per pupil ratio were the most sensitive variables.

In a 1981 study, Kakalik, Furry, Thomas, and Carney investigated the total costs of exceptional student education and related services for various age levels, different handicapped populations, various educational placements, and different size school districts. In addition, the cost of such services as assessment and placement,

instructional services, related services, and administrative services were analyzed. Finally, the added costs of special education and related services for handicapped children were calculated.

The researchers indicated that the total cost of exceptional education and related services per handicapped student in 1977-78 was estimated to be $3,577 which was 2.17 times greater than the cost for the nonhandicapped student. The added cost of special education and related services was estimated to be $1,927 per handicapped student.

The cost factors that were considered in the total cost of educating handicapped students were salaries and fringe benefits of special education teachers and aides; instruction by regular education teachers, related services to include speech, physical, and occupational therapy; assessment of the student's handicapping condition; admission to special program, placement and individual education program, technical assistance to staff members, regular and special transportation, special education administrative costs, general district-level administration and school level administration; food services, facilities operations and maintenance; and interest plus debt retirement.

A wide variation in per-student costs by age level, type of handicap, and educational placement were found in the study. The researchers emphasized that if only age level, handicapping condition, or type of placement was considered in estimating the average total

cost per pupil, the estimate would not indicate the variations in cost and would not differentiate among districts that did not fall within the average (Kakalik et al., 1981).

The cost weighting factor by age levels and type of handicapping condition ranged from 1.98 at the elementary level through 2.48 at the secondary level. By type of handicap, the factors ranged from 1.37 for speech impaired through 5.86 for functionally blind children. The cost weight factors varied by type of educational placement from 0.55 for full-time special education students through 3.24 for students in special day schools for only handicapped pupils (Kakalik et al., 1981).

Rossmiller (1982) conducted a comprehensive study of exceptional education programs in 39 school districts in Idaho. The study provided information on the delivery and costs of educational services for the exceptional students in small school districts. In the study, all school districts in the state were divided into four groups based on their average daily attendance.

The cost data were analyzed to determine if the size of the school districts had noticeable effect on the major delivery system used or the cost of the program. Although differences between and among delivery systems and exceptionalities were noted, Rossmiller (1982) stated that the economies of scale did not appear to be a major factor in the cost by delivery systems or exceptionality.

Essigs (1983) investigated special education costs relative to the total costs of a school district in selected Arizona school districts. The supposition that special education costs should be viewed as only a portion of services that are available to students was examined in the study.

Essigs (1983) first examined the costs for programs in special education and in regular education. Then, the differences that existed between the costs for administration, instruction, instruction support, and operations were reviewed for both special and regular education programs. Finally, the cost relationships that existed among pupil/teacher ratios, teacher salary schedules, and teacher training and experience for special education programs were analyzed. The relationship among cost variables for both regular and special education programs was expressed as a cost index which was a ratio of special to regular education expenditures.

Essigs (1983) found that a wide variation in cost indices existed for both regular and special education programs. The regular education programs ranged from a cost index of 1.51 for industrial arts and home economics through 0.94 for elementary social studies and science programs. The range for special education programs was 3.91 for visually handicapped resource program through 0.56 for resource speech handicapped programs.

Expenditures for special education were obtained in the areas of administration, instruction, instructional support, and operations for

10 categories of exceptionalities. The administrative costs included expenses directly charged to special education plus an allocation of administrative costs from the general fund based on the number of full-time equivalent teachers assigned to each special education category. The instructional costs included expenses for all staff members who worked directly with the handicapped pupils. Costs in the instructional support area included expenses in providing technical and logistical support and those costs associated with providing guidance and psychological services. The operations costs included areas of maintenance, utilities, and other facility expenditures. Wide disparities between exceptionalities relative to the costs of administration, instruction, instructional support, and operations which existed among districts were pointed out in the study (Essiga, 1983).

Essiga (1983) indicated that costs variations existed among districts for resource and self-contained programs. The instruction function contained 60% of the costs as reported by this study. A further investigation of the data indicated that the pupil-teacher ratios have a large impact upon the instructional expenditures on a per student basis.

However, Essiga (1983) reported that the pupil-teacher ratio did not account for all of the expenditure variation. The impacts of teacher salary schedule and teacher training and experience were major

cost factors in individual districts. These sensitive cost factors become more significant in special education programs that traditionally have lower pupil-teacher ratios.

Barker (1984/1985) completed a study to determine the extent to which the Ohio school funding system was fiscally neutral as it related to categorical provisions for handicapped children. Barker examined variables having a bearing on expenditures for handicapped students and the extent to which linear relationships were found to exist. Major cost determinants, teacher salary and class size were regressed on measures of wealth, demand, and effort. These cost determinants were then included with other independent variables in regression using expenditures for handicapped children as the dependent variable. Finally, the excess expenditure for handicapped children was regressed on measures of wealth, demand, and effort, as well as the difference between average class size for handicapped and nonhandicapped classes.

Districts were divided into two types: modal and wealthy. Barker (1984/1985) indicated that for modal districts fiscal neutrality did exist. The valuation per pupil was not systematically related to expenditures per pupil for handicapped students, nor to excess cost for handicapped students. However, for the wealthy districts, wealth and effort were statistically unrelated to state aid.

The purpose of a study by Mincberg (1984/1985) was to develop a methodology which would use actual cost data to develop cost indexes, which would be ratios that reflect the relative costs of special education instructional arrangements and related services, other special programs, and regular education. In the study, costs per FTE were analyzed in the following areas:

1. costs of special education by instructional arrangement,
2. costs of special education by related services,
3. costs of other special programs,
4. costs of regular education, and
5. cost indexes and costs per FTE for special programs.

(p. 287)

Mincberg (1984/1985) used the following expenditures to determine the cost of specific programs: salaries and benefits, purchased and contracted services, supplies and materials, other operating expenses, and capital outlay. The different school functions analyzed were instruction services, instructional related services, pupil services, administration, plant services, data processing services, and ancillary services. Food service and transportation costs were collected but not allocated to specific programs.

In analyzing the cost index ranges, Mincberg (1984/1985) stated that the largest ranges of cost appear in special education. The largest ranges appear most consistently in related services with instructional arrangements close behind. The next largest ranges occurred in vocational education followed by bilingual education. However, these ranges were not nearly as large as those for special education.

Heatly (1984/1985) investigated the differences in the cost of providing special education in Oklahoma school districts whose enrollments vary in size. The purpose of the study was to determine program cost, excess cost, and cost indices for school districts of differing sizes and to analyze the effect of federal categorical monies for special education upon these costs. The 11 districts were divided into three groups: enrollments over 15,000, enrollments under 15,000 but greater than 2,500, and those with enrollments under 2,500. The expenditures included in the calculation of the costs of special education programs were administration, instruction, attendance services, health services, transportation, operation of plant, maintenance of plant, fixed charges, food services, student body activities, and out-going accounts.

Heatly (1984/1985) indicated that little variance was shown in the largest to the smallest districts in the cost of educating high incidence groups of handicapped students. However, in analyzing the lower incidence handicapping conditions, a more cost efficient program was operated by the larger school districts than by the smaller districts. For example, the reported per pupil costs of trainable mentally retarded students in the two largest school districts was $3,931.15 and $3,831.13 as compared to $8,519.72 in the smallest school district.

The least variance in excess cost among schools was found in programs for high incidence handicapping conditions. In the lower

incidence handicapping conditions, the diseconomy of scale was apparent for the smaller school districts with the larger school districts' programs displaying more cost efficiency than the smaller districts.

The same pattern of costs was reported in the cost indices calculated. The highest cost incidences reported were for extremely low incidence handicapping conditions in the smallest school districts. Lower cost indices were reported from the larger school districts in the low incidence handicapping conditions than by the smaller districts.

The effect of the federal monies was greatest on the educable mentally retarded because of its lowest per pupil cost. The effect of federal categorical monies appeared to be so slight as not to be noticed in any but the most inexpensive programs.

In addition, Heatly (1984/1985) stated that the study resulted in some ancillary findings related to the research questions. It was found that inter-district transfers appeared to be a cost efficient means of serving handicapped students. The conclusion was that by utilizing inter-district transfer for low incidence handicapping conditions that a district could keep the per pupil cost at or below mean and median figures.

Excess Costs in Educational Programs

The Select Subcommittee on Education of the United States House of Representatives requested an analysis of the excess costs of

educating the handicapped by type of handicap, by type of instructional situation, and by various other detailed categorizations for the 1972-73 school year. Metz, Ford, and Silverman (1975) conducted a survey of nine state education agencies to collect the necessary data. Some of the major findings of the study were the following:

1. No state surveyed had all the data needed for detailed analysis of excess costs of educating the handicapped.
2. Few of the states maintained a detailed accounting system for their education of the handicapped program.
3. None of the states surveyed maintained, at the requested level of detail, an information system on the resources used for educating the handicapped
4. Cost data were not comparable. States were often unclear as to whether specific costs were included in larger cost categories.
5. Few states provided cost data on institutionalized children under the care of other state agencies.
6. In some SEAs, the progress accounts for special education for the handicapped and general education utilized different cost categories, making excess cost estimates uncertain. (pp. 1-4)

Since only part of the data sought on the numbers and costs of educating handicapped pupils could be provided, the researchers could not make a national estimate of the excess cost of educating handicapped children. Some of the major problems encountered in the Metz et al (1975) study were as follows:

1. In many cases, data were not available to be collected directly through local, state, or other information systems.
2. The data collected were often noncomparable.
3. In several cases, the cost data for handicapped and nonhandicapped could not be separated.
4. In many instances, data were not available by type of disability.

5 The data on total numbers of handicapped pupils not served were determined by application of hypothetical prevalence rates. (p. 5)

Metz, Ford, and Silverman (1975) determined the costs of educating handicapped students as the special education teacher salaries, administrator's salaries, specialist's salaries, salaries of paraprofessionals assisting special education teachers and specialists, special transportation costs, costs for special supplies, materials, and equipment; and reimbursed costs such as tuition and room and board. To compare costs for the handicapped with those of regular students, Metz et al. collected the following information on regular instruction: teacher salaries, professional support staff salaries, administrator salaries, paraprofessional salaries, and transportation salaries

Metz et al. (1975) defined excess costs to be the costs associated with special instruction. A major problem in their study arose in assessing costs of educating handicapped students which was differentiating between special costs for instructing the handicapped from the costs for the proportion of time that the handicapped student received basic instruction

The calculation of per-student cost for the handicapped was approached in two different ways. In the first formula, the ratio numerator included the costs of both special and basic instruction for the handicapped while the denominator included the total number of handicapped students. In the second formula, the ratio numerator

included only costs of special instruction and the denominator was a full-time equivalent (FTE) of handicapped students.

Metz, Ford, and Silverman (1975) proposed that nationally uniform data must be available to compute excess costs of educating handicapped students. They proposed three options that would achieve this goal: a student unit record system, program accounting for the education of the handicapped, and general purpose statistical systems providing partial data.

Under P.L. 94-142, a local educational agency may only use funds for excess costs of providing special education and related services for handicapped children. The act defined excess costs as

> those costs which are in excess of the average annual per student expenditures in a local educational agency during the preceding school year for an elementary or secondary school student, as may be appropriate, and which shall be computed after deducting (a) amounts received under this subchapter or under Title 1 or Title VII of the Elementary and Secondary Act of 1965, and (b) any state or local funds expended for programs which would qualify for assistance under this subchapter or under such titles. (Sec. 1401 (20))

This amount may not include capital outlay or debt service.

The minimum amount leaders of a local educational agency must spend for each handicapped child was computed as follows:

> (a) Add all expenditures of the local educational agency in the preceding school year, except capital outlay and debt service:
> (1) For elementary school students, if the handicapped child is an elementary school student, or
> (2) For secondary school students, if the handicapped child is a secondary school student.

(b) From this amount, subtract the total of the following amounts spent for elementary school students or for secondary school students, as the case may be:
(1) Amounts the agency spent in the preceding school year from funds awarded under Part B of the Act and Title I and VII of the Elementary and Secondary Education Act of 1965, and
(2) Amounts from state and local funds which the agency spent in the preceding schoolyear for:
(i) Programs for handicapped children,
(ii) Programs to meet the special educational needs of educationally deprived children, and
(iii) Programs of bilingual education for children with limited English-speaking ability.
(c) Divide the result under paragraph (b) of this section by the average number of students enrolled in the agency in the preceding school year:
(1) In its elementary school, if the handicapped child is an elementary school student, or
(2) In its secondary school, if the handicapped child is a secondary school student.
(P.L. 94-142, Final Regulations, 1977, 121a.184)

In 1975, Johns completed a study to assist in developing an index of extra costs of education due to sparsity of population for the Florida Education Finance Program. Johns pointed out that the additional costs due to sparsity of pupil population resulted from the necessity to operate with low student-teacher ratios in order to provide equivalent educational programs. In addition, a higher percent of expenditures is required for administrative services in a small district. Leaders of sparsely populated counties also cannot take advantage of large quantity purchasing with their small budgets. Often in the small district specialized services such as plant maintenance must be contracted for rather than have a district plant maintenance department.

Johns (1975) stated that, in order to determine the additional costs necessary to provide equivalent educational programs, the following steps are necessary:

1. compute the additional teachers needed in each county to provide equivalent educational programs,
2. compute the additional cost of the additional teachers needed,
3. add the additional current expenditures needed to present actual current expenditures in order to determine the total current expenditures needed,
4. compute the actual present current expenditures per FTE pupil in each county,
5. compute the total current expenditures needed per FTE pupil in order to provide equivalent educational programs, and
6. compute the percent increase of current expenditures needed per FTE pupil in order to provide equivalent educational programs (p. 180)

Conley (1976) conducted an economic study on the programs for the mentally retarded. Conley stated that four aspects were a part of an economic study: (a) identification of program goals or benefits, (b) measurement of goal attainment and comparison of attainment (cost-benefit) to cost, (c) comparison of alternative ways to achieve goals (cost-effectiveness), and (d) determination of what it costs society not to provide the program (cost of condition analysis).

Conley (1976) defined economics as the allocation of scarce resources among competing uses. Conley further stated that any change in well-being, whether by improved health, enhanced personal security, and/or increased happiness was relevant to the decision to allocate

resources. The real problem lies in how to measure benefits other than earnings and then how to compare these non-earning benefits with costs.

Conley (1976) emphasized that an important part of program cost for the mentally retarded was the concept of excess costs. Conley defined excess cost as the "value of resources expended on programs that would be available for other purposes if retardation did not exist" (p. 22). Conley estimated the excess cost by subtracting benefits paid by income maintenance programs and normal education costs for school age retardates from the total costs. Conley indicated that normal education costs are the amount that would be expended on an equivalent number of non-retarded school aged children.

Marinelli (1976) emphasized that, in order to understand the costs of special education, a clear concept of cost must be developed. Marinelli stated that costs must be viewed as benefits received, by choosing to use them in one manner rather than another. Benefits foregone or lost were called opportunity costs.

Marinelli (1976) reported that in studies of costs of special education the researchers have relied on a determination of excess cost estimates and cost indices. In these studies, special education costs have been compared to regular education costs per full-time equivalent student. The per pupil costs for a category of exceptionality was divided by the per pupil costs for a basic regular

elementary education program to develop a cost indices. Marinelli (1976) defined excess cost of the exceptional education program as the cost differential between special and regular education programs. Marinelli (1976) recommended that the following points be utilized in investigating excess costs:

1. School districts or programs should be selected on a predetermined standard of operation to avoid the inclusion of inefficient regular and exceptional programs.
2. Programs that are starting up should be distinguished from those that are ongoing, since the costs of implementation can greatly increase annual costs.
3. In order to ensure that cost data are collected uniformly and comparable, a single individual or team of individuals should make value judgments when transforming the district's traditional line-items budget or program budget format to the common program budget.
4. The manner in which indirect charges are charged against regular and special programs can have a significant effect on the amount of excess cost and, subsequently, the size of the cost indices. (p. 171)

Based on the growing interest in the use of the excess cost approach to reimbursing school districts, Taylor (cited in Marinelli, 1976) developed a step by step method for determining excess school level costs. The model was developed by delivery systems within categories of exceptionality.

Rossmiller and Frohreich (1979) defined excess cost as the amount by which the per pupil expenditure for exceptional students exceeded the per pupil expenditure for regular students. The excess costs would be determined by the difference in cost multiplied by the number

of exceptional students. Rosamilia and Frohreich emphasized that it was difficult to determine excess cost and to ensure comparability of cost data among districts. A common program format and common accounting procedures would be necessary to ensure comparability of cost data.

The determination of excess cost of special education was one of the purposes of a study completed by Heatly (1984/1985). Heatly defined excess cost as "the added cost of special education and related services above the cost of a regular education program and the minimum average for the education of each of the handicapped children" (p. 14). Heatly calculated program costs for nonhandicapped students by utilizing the excess cost requirements found in the regulations implementing P.L. 94-142.

Heatly (1984/1985) calculated the weighted aggregate excess cost for each handicapping condition in each of the various size school districts by subtracting the per pupil expenditures for handicapped students from the per pupil expenditure for non-handicapped students. The least variance in excess cost was found in programs for educable mentally retarded. The lowest excess cost was found among small school districts which reflected the higher per pupil cost of educating nonhandicapped students. However, in the lower incidence handicapping conditions, the economy of scale favoring the larger school districts was apparent.

Summary of the Related Literature and Research

Historically policy-makers of school systems have had some type of a multidistrict program in existence since the initial formation of public schools. During the 1960s, in a number of states the multidistrict educational programs were reorganized and with the type and range of services were expanded. The states leaders in enacting their legislation established their multidistrict programs in a variety of organizational arrangements. The basic concept underlying the formation of multidistrict programs was to provide direct or indirect services to students that local district staffs could not provide alone.

The newly organized multidistrict program had the potential to provide service in numerous program categories. The provision of services to exceptional students was one of the most common functions or roles of the established multidistrict programs. By 1973, at least 78% of the states had multidistrict programs which provided special education services. With the passage of P.L. 94-142, The Education for All Handicapped Children Act of 1975, local district leaders have increasingly utilized the multidistrict program to provide services to students with low incidence handicapping conditions. These programs must have a large base student population in order to provide appropriate services with an efficient fiscal basis. The financing of the multidistrict programs has been established differently in each state and cost-related evaluations of multidistrict programs are scarce in the literature and research.

Until the 1970s there were limited studies in the area of determining the cost of educating exceptional students. Recently, a number of studies have been conducted in which the researchers established cost indices and analyzed the relationship between basic and exceptional education programs. The cost indices were used rather than per student expenditures so that comparisons could be made between districts over a period of time. These indices were developed to provide a basis for future fiscal planning and program cost estimation.

Data for providing services to exceptional students in various program categories and in different classroom delivery systems were analyzed in the cost studies. Wide variations in costs have been found to exist among the various exceptional education program categories as well as among the specific delivery systems. These cost variations in programs and delivery systems must be considered in estimating the per pupil cost for budgeting purposes.

The researchers investigated and identified expenditure categories that significantly contributed to the cost of providing service to exceptional students. The expenditures for salaries for teachers and teacher aides represented the largest components of expenditures. In some program categories, the cost of transportation contributed significantly to program cost. In addition, the extent of administrative and support services influenced per student expenditures.

Since the federal mandate in 1975 to provide services to handicapped students, a number of researchers at the federal and local levels have analyzed the excess costs of educating handicapped students. It was difficult to determine excess costs without common program formats and standard accounting procedures. However, since P.L. 94-142 required the funds to be used for excess costs for providing special education and related services for handicapped children, a number of researchers continued to utilize the excess cost procedures defined by the act to study the determination of excess cost.

CHAPTER III
DEVELOPMENT OF COST MODELS

This study was designed to determine if excess costs are incurred by the host and participating districts in multidistrict exceptional student education programs. Specifically, in question one the focus was whether a multidistrict program generated additional cost to a host district that would not be incurred in a within the district program and what the relationship, if any, was to the support generated by the Florida Education Finance Program. The second question was whether a multidistrict program generated costs for a participating district and what the relationship, if any, was to the support generated by the Florida Education Finance Program. The final question was what estimated costs would be generated for participating districts if a within the district program was implemented in lieu of participating in a multidistrict program and what the relationship, if any, was to the support generated by the Florida Education Finance Program.

In order to develop the cost models needed to investigate the questions determined by the study, an extensive review of the literature and research was conducted in the areas of public school accounting, public school cost model development, and exceptional education cost studies. The theories, concepts, and established

practices ascertained through this research provided the framework for the development of the cost models. The primary focal point of this chapter is the description of the cost models which are preceded by a review of the recommended accounting procedures, previously developed cost models, and cost studies.

Accounting Procedures

Accounting has been defined as "the art of recording, classifying, and summarizing--in a significant manner and in terms of money--transactions and events which are, in part at least, of a financial character and interpreting the results thereof" (Tidwell, 1974, p. 4). Accounting for school systems differs in many ways from accounting for industry. Florida's legal restrictions placed on the school system's sources of revenues and upon the purposes for which the revenues may be utilized represents at least one such difference.

Cost accounting "can be defined as that branch of accounting concerned with searching out and reporting all elements of the cost incurred in executing a specific activity or a unit of work" (Knezevich & Fowlkes, 1960, p. 152). In school systems, cost accounting has been used to determine and evaluate the cost of units of service for or units of benefits received by the public. Because of the difficulty in objectively measuring educational services, public school cost accounting has been confined to recording how much was spent in definable areas of programs.

Tidwell (1974) stated that

> accounting principles and procedures commonly identified as fund accounting best serve local and state school systems because legal restrictions and limitations are more easily presented and transactions are more effectively analyzed, recorded, and reported through the use of fund accounting than through accounting principles which apply to commercial transactions. (p. 5)

All types of accounting procedures provide information for two purposes: (a) making decisions within the organization and (b) reporting to persons outside the organization who have a legitimate interest in its business (Belhaoui, 1980).

Florida's Program Accounting System

The accounting system of public schools form the basis of cost analysis studies of educational programs. The accuracy and precision of the results of these studies are dependent on the financial data available within the district. In addition, the comparability of results from system to system depends on the uniformity in procedures and terminology utilized. The varied assignment of expenditure objects to functions could result in certain costs in an analysis to be misrepresented (Cambrun, 1978). The United States National Center for Education Statistics published Financial Accounting for Local and State School Systems (United States Department of Education, 1980) to provide a national standard for school district accounting and financial reporting. Adoption of the guidelines in Financial Accounting for Local and State School Systems was not required by federal law. However, in

Florida, the federal guidelines in developing A Manual: Financial and Program Cost Accounting and Reporting for Florida Schools (Florida Department of Education, 1983) were utilized. The expenditure dimensions, revenue accounts, and indirect cost proration from A Manual: Financial and Program Cost Accounting and Reporting for Florida Schools were utilized in this study.

The Florida Education Finance Act of 1973 required program cost accounting and reporting on a school basis. The Florida program costing system had two central elements: "(a) identification of direct program costs and aggregation of those costs by program, and (b) attribution of indirect costs to programs on an appropriate basis" (Florida Department of Education, 1983, p. 5-1).

The Florida law required that program accounting include at least the programs for which full-time equivalent (FTE) students were counted. The programs included 3 grade groupings in basic education, alternative education, and mainstream in basic programs; 9 vocational-technical program categories, and 16 adult general education programs. "In addition to the FTE programs, it was necessary to account for costs of categorical programs and other earmarked funds on a project basis" (Florida Department of Education, 1983, p. 5-2). All expenditures from the general fund and special revenue funds except for community services were included in program costs. Capital expenditures for land improvements, building and fixed equipment, and remodeling were excluded from program costs. Transportation and food

services were reported on a school basis but were not attributed as costs of programs.

In Florida, expenditures were categorized under nine dimensions: fund, object, activity assignment, function, facility, program, fiscal year, instructional organization, and project/reporting.

> A fund is a fiscal and accounting entity with a self-balancing set of accounts recording cash and other financial resources, together with all related liabilities and residual equities or balances, and changes therein, which are segregated for the purposes of carrying on specific activities or attaining certain objectives in accordance with special regulations, or limitations. (Florida Department of Education, 1983, p. 1-2)

The basic structure of funds in Florida's school districts was as follows: general fund, debt services funds, capital projects funds, special revenue funds, general fixed assets, and general long-term debt.

An object was "the article purchased or the service obtained" (Florida Department of Education, 1983, p. 1-3). The eight major object categories used in Florida's school districts were salaries, employee benefits, purchased services, materials and supplies, capital outlay, replacement of equipment, and library books for existing libraries, other expenses, and transfers.

The activity assignment was "used only in conjunction with the object category salaries." Activity assignment refers to the description of the activity assigned to a staff member. This

dimension was used to interrelate staff activities to a program and its costs" (Florida Department of Education, 1983, p. i-3). Examples of assignments were teacher, teacher aide, librarian, principal, and custodian.

The function meant "the action or purpose for which a person or thing is used or exits" (Florida Department of Education, 1983, p. i-4). The activities for Florida's school districts were divided into the following four categories: instruction, instructional support services, general support services, and community services.

The dimension in which costs was accumulated by a school and office location was the facility. The program dimension related the expenditures to four broad program categories: basic programs, exceptional student programs, vocational-technical programs, and adult general education programs. The fiscal year was the 12-month period in which the annual budget applied which in Florida began July 1 of each year and concluded on June 30. The instructional organization identified "the specific level of instruction benefitting from a particular expenditure" (Florida Department of Education, 1983, p. i-4). The project/reporting dimension was "used to account for expenditures on federal contracts, categorical aids, and construction projects" (Florida Department of Education, 1983, p. i-4).

In Florida, K-12 revenues were characterized by source. Revenue sources were determined by law and the revenue dimensions in Florida

was basically unchanged by the traditional chart of accounts. The major accounts were federal direct, federal through state, revenue from state sources, revenue from local sources, transfers, and non-revenue sources. The federal direct revenue was "received from the federal government directly without going through a state as a distributing agency" (Florida Department of Education, 1983, p. 3-6). Federal through state revenues were "received by the district from the federal government indirectly through the state" (Florida Department of Education, 1983, p. 3-7). Revenue from state sources were revenues received by the district from the state. Revenue from local sources were revenues received through local means. Transfers were "transactions between funds administered by the same board and represent budgeted movement of monies not to be repaid" (Florida Department of Education, 1983, p. 3-15). Non-revenue receipts consisted of "amounts received which either incur an obligation that must be met at some future date or change the form of an asset from property to cash and therefore decrease the amount and value of school property" (Florida Department of Education, 1983, p. 3-15).

Indirect Costs

Direct and indirect costs are involved in cost accounting. The A Manual: Financial and Program Cost Accounting and Reporting for Florida Schools defined indirect costs as "those costs which are of such nature they cannot be readily or accurately identified with a program

or the instructional function" (Florida Department of Education, 1983, p. 5-5). In Florida, indirect costs could be attributed on three bases: number of teachers (staff), full-time equivalent students (FTE), and time/space. The FTE student basis was used for those costs which tended to increase or decrease with the number of students or which were otherwise related to students. The number of full-time equivalent teachers paid from general fund and special revenue funds were for those costs which tended to increase or decrease with the number of teachers or which were otherwise more related to staff than students. Time and space are used for those costs which varied with the amount of space used by the program (Florida Department of Education, 1983). The bases as they related to instruction support and general support functions are summarized in Table 1.

Two factors were involved in the determination of required attribution bases. They were as follows:

1. The causal relationship between the expense item and the program benefitted. There are certain expenditures which tend to increase or decrease on numbers of students or staff, or other factors, vary.
2. Cost involved in applying a particular attribution basis. A basis may be preferred in terms of causal relationship, but the cost of securing data for its use may not be justified by the additional degree of accuracy derived. (Florida Department of Education, 1983, p. 5-6)

The Florida system included the identification of a basis for each support function. In some situations, a particular activity might be more appropriate on a different basis than other activities of the same function, however, all the costs of the function were attributed in accord with the most significant causal relationship.

Table 1

Indirect Costs

FTE Students	Staff	Time/Space
Pupil Personnel Services	Instruction & Curriculum Development	Operation of Plant
Instructional Media	Instructional Staff Training Service	Maintenance of Plant
Food Service	General Administration	Facilities Acquisition & Construction
Pupil Transportation Services	School Administration	
Board	Fiscal Services	
	Central Services	

Source. Florida Department of Education. (1983). A manual: Financial and program cost accounting and reporting for Florida schools, p. 5-5. Tallahassee: author.

Cost Model Studies

Kakalik (1978) stated that "a resource cost model expresses the relationship between the human and other resources and measures of cost" (p. 21). Rapp, Carpenter, Haggart, Landa, and Sumner (1971) reported that a cost model "translates the resources required for a particular program into the dollar cost of the program by making use of the interrelationships of the program components, the resources they utilize, and the resource costs" (p. 76) Haggart (1971) emphasized that a cost model first is intended to determine the facilities, staff, equipment, materials, and services needed to conduct the educational program and then translate these resource requirements into estimated program cost.

Rapp et al. (1971) stressed that the value of a cost model was that it enabled the administrator to rapidly and consistently explore the impact of change in the costs of resources and in the way resources are distributed. Haggart (1971) stated that a cost model helped ensure cost comparability among programs for decision-making purposes by providing a consistent methodology for estimating program costs.

Hartman (1981b) emphasized that the resource cost model approach offered a number of advantages for estimating the cost of special education. The first advantage was that the resource cost model was concentrated on the educational and programmatic relationships and decisions that were involved in special education. Then the programmatic aspects were translated into costs. Secondly, with the

resource cost model the administrator could identify and specify the educational programs for which costs were to be estimated. The educational process was not hidden in the cost calculations. The third advantage was that the aspects of the educational process that were relevant to special education were included and those not relevant were excluded. Fourth, the resource cost model proved highly flexible. The fifth advantage was that the focus of the cost estimation and analytical efforts were controlled by the objective of the study not by the availability of cost accounting data. The sixth advantage was that cost estimates were based on expectations about future programs rather than historical practices and costs. Finally, the use of a cost model permitted a sensitivity analysis of each of the model's variables.

Haggart (1971) developed a planning cost model for estimating the comparable replication cost of an educational program for use in evaluating alternative programs and planning future programs. Haggart stated that in developing and planning cost models the approach was to first determine the facilities, staff, equipment, materials, and services needed to conduct the educational program and to then translate these resource requirements into an estimated program cost.

Haggart (1971) emphasized that the first step in analyzing the resource requirements and cost of a program was to define the program. Haggart stated that the quality of the estimated cost of the educational program depended on the thoroughness with which the

resource requirements of the program were determined which was based on the description of the educational program. The definition of the program should include what the program is and how the program works.

The second step Haggart (1971) completed in developing the planning cost model was the determination of the resource requirements. Data about the characteristics of the students served and the number of the students served must be included. Also, data on other district conditions that might have an effect on the outcome such as income level, turnover rate, or mobility should be provided. Information about instructional time should also be determined. Haggart emphasized that the student-teacher ratio information should be refined.

In specifying the facilities needed, Haggart (1971) stated that the space requirements, laboratories, and their utilization rates should be precisely determined. If nonschool facilities are required, they should also be identified. Special needs such as electrical outlets, air conditioning, carpeting, and lighting should be specified. Furnishings should also be identified.

The staffing allocation should be determined for teachers, special teachers, paraprofessionals, and other personnel. Haggart (1971) cited that the allocation should be defined in terms of qualifications as well as in terms of numbers. If personnel work less than full time, the percent of time involved in the program should be delineated.

Haggart (1971) emphasized that equipment and materials should be identified as program-related or student-related. Haggart defined program-related materials as "that which will be used by several students during the day or some time period of the program" (p. 8). Student-related equipment or material was defined as "that which is required because there is a specific number of students in the program" (Haggart, 1971, p. 8). Some distinction should be made about the lifetime of the equipment and the consumable nature of the materials.

Involvement in preservice and inservice training should be specified. Haggart (1971) stated that it should be determined if training time was included as a part of the regular staff time or if it required additional time. The requirement of additional teachers or substitutes should also be included.

Support from other areas such as transportation should also be identified. For instance, a particular education program might require field trips. This would require additional transportation over and above the cost of the home-to-school transportation.

The cost element structure is intended to bring together the items, services, people, and activities, and their cost in one format. The cost elements are grouped into two broad categories: the acquisition cost and the operational cost. "The acquisition cost is the one time cost to acquire a capability. The operational cost is the continuing cost

to maintain a capability over a period of time" (Haggart, 1971, p. 11). Those costs of the school district operation not affected by the existence of the program are not included in the estimated cost of the program.

Ernst and Ernst (1974) developed a cost model to determine the costs of special education as compared with that for general education. Ernst and Ernst based their model on the unit-cost concept. The activities involved in the educational process must be defined in terms of units of service to which prices can be related. As a result of the study, the authors developed a unit of service measure and designated it as the Ernst and Ernst Student Educational Unit (EESEU). The EESEU defined the unit of service as a 10-minute time period. The EESEU defined each educational activity as a 10-minute time period and the components of cost associated with delivering that 10-minute time period to one child. "Costs are then developed as a function of the delivery of specified types and amounts of 10-minute time periods of education to the child" (p. 40).

The various activities described by the EESEU are grouped into three categories. The first category was instructional activities which included such activities as reading, arithmetic, science, social studies, and other instructional activities. Holding activities were the second category of activities. These activities involved the supervision of children but no instruction was provided. The third

category of activities were service activities which involved the delivery of service to a child.

For each EESEU that was defined,

> it is necessary to describe the components required to deliver the service. A listing of necessary equipment, textbooks, and consumable supplies required; a statement of the type of facility required, such as a classroom, gym, or lunchroom, a record of the personnel required to deliver the EESEU for example, bus driver, teacher's aide, or the minimum level of education and experience required of the teacher, and a statement of the capacity of the EESEU in terms of the optimum number of students to which the EESEU should be delivered must be recorded. (Ernst & Ernst, 1974, p. 42)

The total rate per EESEU was comprised of four component rates: primary, secondary, tertiary, and quaternary rates. "The total EESEU rate represents the total costs of delivering a 10-minute period of education to one child and is equal to the sum of the component primary, secondary, tertiary, and quaternary rates" (Ernest & Ernst, 1974, p. 43).

The primary rate for each EESEU was defined as the cost of the primary person in charge who was required for the delivery of that particular EESEU. The secondary rate for each EESEU was defined as the cost of personnel required other than the primary person in charge, and the books, equipment, and consumable supplies required in the delivery of the service (Ernst & Ernst, 1974).

The tertiary rate for each EESEU represented the administrative costs related to the delivery of a particular unit of education.

These would include the cost of district-wide and school-wide personnel. These items of costs were allocated or pro-rated to all EESEUs in order to develop the tertiary rate (Ernst & Ernst, 1974).

The quaternary rate represented certain items of occupancy cost related to each EESEU. Examples of these kinds of costs included salaries paid to district-wide operation and maintenance personnel and district-wide expenditures for operation and maintenance, such as contractual services, supplies, heating, and utilities. Occupancy costs at the school level were also included. These items of cost were allocated or pro-rated to all EESEUs in order to develop the quaternary rate (Ernst & Ernst, 1974).

Cambron (1976) developed a model to analyze the costs of five alternative instructional delivery systems for exceptional education programs. Cambron included all current operating costs with the exception of capital outlay in the cost model. Capital outlay, or equipment costs, was treated separately from program costs. Three categories were utilized in classifying expenditure components: direct instructional costs, instructional support costs, and general support costs. The functions omitted included community services, debt service, and fund transfers.

The objects of expenditure for direct instructional costs included salaries, employee benefits, purchased services, materials and supplies, and other expenses. Only the salaries of teachers and

aides were recognized as direct costs. The salaries of principals, secretarial and clerical staff, other instructional staff, and supervisors were included under instructional and general support. Items such as retirement, social security, and insurance were included under employee benefits. Materials and supplies included consumable materials and textbooks. The other expenses listed under instruction were identified directly with the area of instruction.

The instructional support costs were regarded as indirect cost. Cambron (1976) divided instructional support services into pupil and staff services. Some of the pupil services included attendance and social work, guidance, health, and psychological services. Some of the staff services included instructional media, instruction and curriculum development, and instructional staff training. Objects of expenditures listed under the instruction function were also included for each support service. The expenditures were salaries, employee benefits, purchased services, materials and supplies, and other expenses.

The general support costs were indirect costs incurred in operating and managing the cost system. Cambron (1976) included district level and school level costs under administration. Other general costs included under this area were transportation, operation of plant, maintenance of plant, and food services. The objects of expenditures included were salaries, employee benefits, materials and

supplies, purchased services, and other expenses. The total program cost was determined by the total direct instructional cost and the indirect cost of instructional and general support services.

Hartman (1981a) completed a study to estimate the costs of providing all school-aged, handicapped children in the United States with an appropriate education in 1980-81. A resource-cost model approach was utilized to meet the cost estimation methodology objectives and to overcome the difficulties of previous studies. The resource cost model approach was based on a mathematical formulation of the relationships among students, programs, resources, and decision rules involved in the special education process.

> The students to be served and the instructional programs that were to be utilized were specified along with resources used in each program (e.g., teacher, aide, instructional materials and supplies, and maintenance and operating expenses). Prices were assigned to each resource, and costs were then estimated based on the values of the programmatic and price variables in the model. (Hartman, 1981a, p. 35)

The special education planning model (SEPM) was the resource cost model utilized in the cost estimate study. Decision variables and planning variables were the two types of data required for operation of the model. The decision variables represented programmatic choices, judgements, and assumptions made about the special education process. Some examples of decision variables would be handicapping conditions to be served, estimated incidence rates of handicapping conditions, program and services to be provided, use of resources

within each program, allocation of handicapped students to each program, and the number of students in each instructional setting. The planning variables were variables that were not controlled by the decision makers. Examples of planning variables were the total school age enrollment and the rate of inflation.

Cost Studies in Exceptional Education

In the National Education Finance Project satellite study, Rossmiller et al. (1970) examined the following expenditure components: administration, clerical and secretarial, food services, fringe benefits for certificated staff, fringe benefits for non-certificated staff, guidance and counseling, health services, instructional supplies and equipment, operation and maintenance, other costs of current operation, other supportive services, teachers' salaries, teacher aides' salaries, capital outlay, debt services, and transportation. The expenditure components were then grouped into the following broad expenditure categories: management, instruction, instructional support, institutional operation, acquisition of facilities, and equipment and services.

In allocating indirect cost, the assumption was made that the cost per pupil in regular and exceptional education was the same unless additional costs were reported for the exceptional programs. Indirect cost of operation and maintenance was derived on the amount of space provided per student. The total enrollment of the school

district was divided into the cost reported for operation and maintenance. Thirty square feet were allocated to each student in the regular program. To determine the per student cost in the exceptional education programs, the number of square feet occupied by the exceptional students was divided by 30 to arrive at an index. This index was then multiplied by the calculated per student cost. The costs of transportation per student, capital outlay per student, and debt service per student were reported. However, these costs were not included in the per student costs for the various programs.

In a related study, Bentley (1970) selected the following expenditure components: administration, fringe benefits, instructional supplies and equipment, operation and maintenance, supportive services, teacher salaries, teacher aide salaries, and transportation, clerical and secretarial salaries, and food services. Bentley (1970) utilized the same techniques for establishing indirect costs that Roesmiller et al. (1970) reported.

Singletary (1973) selected 12 primary cost categories to analyze in his study of the costs of programs for educable mentally retarded. The cost categories were teacher salary, support staff salary, salary for aides for instruction, salary payment to clerk and other non-academic aides for instruction, administration and general control, instructional supplies and equipment, operation and maintenance of plant, transportation, other auxiliary services, fixed charges, community services, and total current operating expenses.

Sorensen (1973) studied seven school systems in Illinois to determine the relationship between the cost of regular and exceptional student education programs. The costs incurred in direct services for special classes, support services for the special program, and administrative and operational expenses which applied to all students in the system were emphasized in the study. Capital outlay and transportation were not included in the expenditures analyzed.

In a similar study, Clemmons (1974) analyzed the cost of exceptional education in six Minnesota school districts. The cost components included administration, clerical and secretarial, food services, fringe benefits for staff, guidance and counseling, health services, instructional supplies and equipment, operation and maintenance, other supportive services, teacher salaries, teacher aide salaries, and salaries of other non-certificated personnel. Indirect costs were determined by dividing the total expenditure for an indirect cost component by the number of students in all programs.

Metz, Ford, and Silverman (1975) conducted a survey of nine state education agencies to collect data to determine the excess costs of education for the handicapped by type of handicap, by type of instructional situation, and by various other detail categorizations. The cost components analyzed were teacher salaries, administrator salaries, specialist salaries, paraprofessional salaries, special transportation costs, costs for special supplies, materials and equipment, and reimbursed costs such as tuition and room and board.

Cambron (1976) developed a cost model to determine the current operating cost and equipment used in five alternative delivery systems for exceptional programs. The cost components analyzed were teacher salaries and fringe benefits, purchased services, materials and supplies, other expenses, pupil personnel service, instructional media, instruction and curriculum development, instructional staff training, district administration, school administration, transportation, operation of plant, maintenance of plant, and food service.

Indirect costs were allocated on the basis of three aspects: (a) FTE pupils, (b) staff, and (c) time and space. The services of pupil personnel and instructional media were allocated on an FTE pupil basis. The areas of instruction and curriculum development and instructional staff training were allocated on the basis of instructional staff. District and school level administration expenditures were allocated on a staff basis. The transportation and food services were allocated on an FTE basis.

Marriner (1977) completed a study which was the first attempt to identify detailed cost information on specific exceptional student education programs in a major urban school system. The cost components used were central management, bureau management which included administration, clerical, and secretarial, instructional services which included supervisors, teachers, and teacher aides, instructional support which included supplies and

equipment, guidance counselor, other professionals, diagnostic/clinical, and speech services; institutional operations which included leasing, fringe benefits, and pensions; Title VI; Title I; other reimbursable, and transportation. The indirect cost was calculated on a per pupil basis

In 1981, Kakalik, Furry, Thomas, and Carney investigated the total costs of exceptional education and related services for various age levels, different handicapped populations, various educational placements, and different size school districts. The cost components utilized were salaries and fringe benefits of special education teachers and aides; instruction by regular duration teachers, related services to include speech, physical, and occupational therapy; assessment of the student's handicapping condition; admission to special programs, placement and individual education programs, technical assistance to staff members, regular and special transportation, special education administrative costs, general district level administration and school level administration, food services, facilities operations and maintenance; and interest plus debt retirement.

Rassmiller (1982) conducted a comprehensive study of exceptional education programs in 39 school districts in Idaho. The cost components used were teacher salaries and fringe benefits and teacher aide salaries and fringe benefits. Some costs could not be attributed directly to a specific exceptional children program but could be

attributed to exceptional children in the districts. These costs included salary and fringe benefits for special education directors and supervisors, psychologists, social workers, and consulting teachers. These costs were attributed directly across all exceptional children. In addition, such costs as supplies, travel, textbooks, and employee insurance were attributed to all exceptional children.

General administration, building administration, substitute teachers, librarians, audiovisual personnel, counselors, secretarial and clerical personnel, attendance services, health services, plant operation, plant maintenance, and certain fixed charges were considered indirect costs and were attributed to all pupils general and special. Expenditures for transportation, food services, student body activities, community services, capital outlay, and debt service were not included in the cost computation. These expenditures could not be attributed directly or indirectly to either regular or exceptional programs.

Essige (1983) investigated special education costs relative to the total costs of a school district in selected Arizona school districts. The cost components used were instructional salaries and employee benefits, noninstructional salaries and employee benefits, administration, instructional support, and operations. Costs in the instructional support included expenses in providing technical and logistical support and those costs associated with providing guidance and psychological services. The operation costs included areas of

maintenance, utilities, and other facility expenditures. The indirect costs or all special education expenses not assigned to a particular program were allocated to each program based on a full-time equivalent teacher basis.

Minchorg (1984/1985) completed a study in which she developed a methodology which would use actual cost data to develop cost indexes that would reflect the relative costs of special education instructional arrangements and related services, other special programs, and regular education. The cost components analyzed were salaries and benefits, purchased and contracted services, supplies and materials, operating expenses, and capital outlay. The different school functions analyzed were instruction services, instructional related services, pupil services, administration, plant services, data processing services, and ancillary services. Food service and transportation costs were collected but not allocated to specific programs. Indirect costs were allocated on an average daily membership basis for all students.

Heatly (1984/1985) investigated the differences in the cost of providing special education in Oklahoma school districts whose enrollments varied in size. The expenditures included in the calculation were administration services, instructional services, attendance services, health services, transportation services, operation of plant, maintenance of plant, fixed charges, food services, student-body activities, and out going transfers. Capital

outlay, debt service, and community service costs were omitted. Indirect costs were pro-rated on a total pupil count basis.

Displayed in Table 2 are the cost expenditures analyzed in the preceding cost studies. The cost components utilized by three or more studies are as follows:

1. Administration (13)
2. Teacher salary (13)
3. Teacher aide salary (13)
4. Fringe benefits certificated staff (12)
5. Fringe benefits non-certificated staff (12)
6. Operation and maintenance of plant (11)
7. Transportation (10)
8. Instructional supplies and equipment (9)
9. Clerical and secretarial (8)
10. Food services (8)
11. Guidance and counseling (7)
12. Other supportive services (5)
13. Health services (4)
14. Diagnostic and clinical (4)
15. Other costs of current operation (3)
16. Capital outlay (3)
17. Debt service (3)
18. Other auxiliary services (3)

Table 2

Cost Expenditures from Previous Cost Studies

Expenditure	Rossmiller (1970)	Bentley (1970)	Sieglaff (1973)	Sorenson (1973)	Clemmons (1974)	Metz, Ford & Silverman (1975)	Cambron (1976)	Morrison (1977)	Kakalik et al. (1981)	Rossmiller (1982)	Baliga (1983)	Winchberg (1985)	Healy (1986)
Administration	X	X	X	X	X	X	X	X	X	X	X	X	X
Clerical & Secretarial	X	X	X		X			X		X		X	X
Food Services	X	X			X		X		X	X		X	X
Fringe Benefits Certified Staff	X	X	X	X	X		X	X	X	X	X	X	X
Fringe Benefits Non certified Staff	X	X	X	X	X		X	X	X	X	X	X	X
Guidance & Counseling	X				X		X	X		X	X	X	
Health Services	X				X					X			X
Instructional Supplies & Equipment	X	X	X		X	X	X	X		X		X	
Operation & Maintenance	X	X	X	X	X		X		X	X	X	X	X
Other Costs of Current Operation	X							X				X	
Other Supportive Services	X	X	X	X	X			X					
Teacher Salary	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 2--continued

Expenditure	Rossmiller (1970)	Bentley (1970)	Singletary (1972)	Sorensen (1973)	Clemmons (1974)	Metz Ford & Silverman 1975	Lindgren (1976)	Merriner (1977)	Kakalik et al 1981	Rossmiller (1982)	Tejiga (1983)	Minzberg (1985)	Hently (1986)
Teacher Aide Salary	X	X	X		X	X	X	X	X	X	X	X	X
Capital Outlay	X									X		X	
Debt Service	X								X	X			
Transportation	X	X	X			X	X	X	X	X		X	X
Other Auxiliary Services			X										
Fixed Charges			X										
Community Services			X							X			
Salaries Other Non-certificated					X								
Diagnostic/Clinical								X	X		X		
Speech Services								X	X				
Occupational Therapy									X				
Physical Therapy									X				
Instruction by Reg Ed Teachers									X				
Admission to Special Programs									X				
Placement & IEP									X				

Table 2--continued

Expenditure	Rossmiller (1970)	Bentley (1970)	Singletary (1973)	Sorenson (1973)	Clemens (1974)	Metz & Silverman (1975)	Furst	Cambron (1976)	Marriner (1977)	Kakalik et al (1981)	Assmilles (1982)	Ezelgo (1983)	Minchery (1985)	Measly (1985)
Reimbursed Costs						X			X					
Total Current Operating Expenses			X											
Specialist Salaries						X								
Purchased Services								X					X	
Other Expenses								X						
Instructional Media								X		X				
Inmate & Care Development								X						
Instructional Staff Training								X						
Support Staff Salary			X						X					
Pensions									X					
Title VI									X					
Title I									X					
Technical Staff Assistance										X		X		
Social Workers											X			
Consulting Teachers											X			

Table 2—continued

Expenditure	Maxwell & Carter (1970)	Bentley (1979)	Singletary (1975)	Sorensen (1973)	Clemmons (1974)	Metz & Ford (1975)	Silverman	Cambern (1976)	Mortimer (1977)	Kakalik et al. (1981)	Rossmiller (1981)	Enzigo (1983)	Minsberg (1980)	Henrie (1985)
Travel											X			
Textbooks											X			
Employee Insurance											X			
Substitute Teachers											X			
Attendance Services											X			
Student Body Activities											X			
Data Processing Services													X	
Outgoing Transfer														X

Cost Model Development

The cost models developed in this study were designed to determine if excess costs were incurred by the host and participating districts in multidistrict exceptional education programs. The following specific information was generated by the cost models:

1. Costs of a multidistrict program generated for the host district,
2. Estimated costs that would be generated by the host district for a within the district program,
3. Costs of a multidistrict program generated for the participating districts, and
4. Estimated costs that would be generated by the participating districts for within the district programs.

Separate cost models were developed for the host and participating districts. The development of the cost models was based on the following components: (a) identification of expenditure components, (b) development of a method for allocating district and school level indirect costs that reflected actual costs rather than redistributive costs, (c) establishment of data collection methods, (d) determination of costs, and (e) calculation of generated program revenues.

Identification of Expenditure Components

The expenditure dimensions from A Manual: Financial and Program Cost Accounting and Reporting for Florida Schools (Florida Department of

Education, 1982) were utilized in the study. All expenditures from the general fund and special revenue funds except for community services are included in program costs. In Florida, transportation and food services were usually reported on a school basis but were not attributed as costs of a program. However, this study included the costs of transportation that were directly related to the program since transportation of students to a specialized instructional program was a central issue in this study. The expenditures were classified into three functions: instruction, instructional support services, and general support services. The community services function was not utilized in this study. In the following sections, the three functions and their objects are discussed.

Instruction

Instruction included "the activities dealing directly with the teaching of pupils, or the interaction between teacher and pupils. Instruction is subdivided into Basic (K-12), Exceptional, Vocational-Technical, and Adult General" (Florida Department of Education, 1983, p. 1-3). There were eight major object categories used in Florida's A Manual: Financial and Program Cost Accounting and Reporting for Florida Schools (Florida Department of Education, 1983). They were salaries, employee benefits, purchased services, materials and supplies, capital outlay, replacement of equipment and library books for existing libraries, other expenses, and transfers. The instruction function

included the salaries and employee benefits for teachers in basic and exceptional education and teachers' aides. The other objects utilized included purchased services, materials and supplies, capital outlay, and other expenses. The objects of replacement of equipment and library books for existing libraries or transfers were not used in this study.

Instructional Support Services

Instructional support services included "administrative, technical, and logistical support to facilitate and enhance instruction. Support services included pupil personnel services, instructional media, instruction and curriculum development services, and instructional staff training services" (Florida Department of Education, 1983, p. 1-4). The category of pupil personnel services included guidance services, health services, and psychological services. The objects included under this function were salaries, employee benefits, purchased services, materials and supplies, capital outlay, and other expenses. In Florida, instructional support services are generally considered indirect costs. "Indirect costs are those which were of such nature they cannot be readily or accurately identified with a program or the instructional function" (Florida Department of Education, 1983, p. 5-5). This study included only those costs in instructional support services that were direct costs related to providing the specialized multidistrict programs of physically impaired and hearing impaired.

General Support Services

General support services included "those activities concerned with establishing policy, operating schools and the school system, and providing the essential facilities and services for the staff and pupils" (Florida Department of Education, 1983, p. 4-4). General support services included the board, general administration, school administration, facilities acquisition and construction, fiscal services, food services, central services, pupil transportation services, and operation of plant. In Florida, those costs of the general support services function were considered indirect costs. The objects included under general support services were salaries, employee benefits, purchased services, materials and supplies, capital outlay, and other expenses. This study included only those costs in general support services that were direct costs related to providing the specialized multidistrict programs of physically impaired and hearing impaired.

The expenditure components for the host district are listed in Table 3. Displayed in Table 3 are the direct costs, the functions, and the objects involved in establishing the cost in the host district. The expenditure components for the participating districts are listed in Table 4. Presented in Table 4 are the direct costs, the functions, and the objects involved in establishing the cost to the participating districts.

Table 3

Direct Cost Expenditure Components for Host Districts

Instruction*	Instructional Support Costs*	General Support Costs*
Basic Instruction	Pupil Personnel	School Board
ESE Instruction	Guidance Services	General Administration
ESE Non-Instructional	Health Services	School Administration
	Psychological Services	Facilities Acquisition & Construction
	Instructional Media	Fiscal Services
	Instruction and Curriculum Development Services	Food Services
		Central Services
	Instructional Staff Training Services	Pupil Transportation Services
		Operation of Plant

*The following objects are included under each function: salaries, employee benefits, purchased services, materials and supplies, capital outlay, and other expenses.

Table 4

Direct Cost Expenditure Components for Participating Districts

Instruction*	Instructional Support Costs*	General Support Costs*
Noninstructional ESE	Pupil Personnel	General Administration
	Psychological Services	Pupil Transportation Services

*The following objects are included under each function: salaries, employee benefits, purchased services, materials and supplies, capital outlay, and other expense.

Method for Allocating District and School Level Indirect Costs

Indirect costs are "those costs which are of such nature they cannot be readily or accurately identified with a program or the instruction function" (Florida Department of Education, 1983, p. 5-5). In the previous cost studies in exceptional education, the researchers utilized different methods for attributing indirect costs. This study included only those expenditures generally classified as indirect costs if the expense could be directly linked to the provision of specialized services to the physically impaired or hearing impaired in the multidistrict programs. Those indirect costs which were considered as reattributed were not included in this study.

Data Collection Methods

The following types of data were collected in this study (a) financial data by program, function, and object; (b) FTE information on the selected pupils identified by the study; and (c) interview information from the local exceptional student education program administrators. In the following section, a description of the types of data needed, the sources of the data, and how the data were collected are listed.

The financial data were collected on the physically impaired and hearing impaired programs in the host district. The functions and objects that were utilized are found in Table 3. In the participating districts, data were collected on those functions and objects that were related to providing services to the physically impaired and hearing impaired through the host district. The functions and objects utilized are found in Table 4. The FTE information collected on each student was as follows: (a) time in the physically or hearing impaired programs, (b) time in related services, (c) time in basic programs, (d) time in vocational programs, (e) grade to which student was assigned, and (f) home school district for each student. The transportation FTE information was also collected on students transported from the participating districts to the host district.

Information was also collected from each local exceptional student education program administrator. The structured interview included information in the following areas: (a) type of

exceptionalities involved in multidistrict program, (b) the number of students from the school district participating, (c) types of expenditures incurred by the district's hosting or participating in a multidistrict program, (d) information pertaining to within the district programs, (e) advantages of hosting or participating in a multidistrict program, and (f) disadvantages of hosting or participating in a multidistrict program.

The sources of the data were through the annual Cost Analysis for Florida Schools and Districts, Programs for Exceptional Students' Annual Report (Florida Department of Education, 1983), the annual financial reports and program cost reports for the selected host and participating districts, statistical reports from the Florida Department of Education, and the district and school level full-time equivalent survey forms for the four FTE counts in 1985-86 In addition, data were collected from the host and participating districts' finance, personnel, transportation, and exceptional education departments through purchase orders, reports, and formal correspondence

Form A was developed for the collection of the financial data (see appendix). This form was designed by the researcher and was reviewed and deemed appropriate for its intended use by a panel consisting of exceptional education directors and finance directors not involved in the study. The data were collected from the Florida Department of Education and the selected local districts' financial departments involved in the study

The FTE information was collected on the physically impaired and hearing impaired students from the host and participating districts. The data were collected directly from the FTE forms at the five schools housing the students. The forms for the four FTE counts in 1985-86 were reviewed. Form B was used in the collection of this information and is included in the appendix. This form was designed by the researcher and was reviewed and deemed appropriate for its intended use by a panel of exceptional education directors and finance directors not involved in this study.

Information from each exceptional student education administrator was collected through a structured interview. Form C in the appendix was utilized in the structured interview. This form was designed by the researcher and was reviewed and deemed appropriate for its intended use by a panel of exceptional education directors not involved in this study. The structured interview of each exceptional education administrator was conducted by personal interview or by telephone interview.

Determination of Costs and Calculation of Revenues

The first question of the study was focused on the additional costs of a multidistrict program generated by the host district in comparison to a within the district program. First, a cost per weighted FTE was calculated for the multidistrict program by utilizing the data collected on the financial data collection form.

A within the district program was then designed for the students in the host district only. The first step in developing a comparable replication program model was to define the program in terms of its students and its resource requirements. The next step was to translate the resource requirements into an estimated program cost. The estimated costs of the comparable replication program were determined by utilizing the average costs of those functions and objects based on the reported cost in the Progress Cost Analysis Report Series, 1985-86 (Florida Department of Education, 1987a) for the host district. The objects calculated in this manner were salaries and benefits for physical and occupational therapy and speech therapy for the physically impaired, purchased services, materials and supplies, capital outlay, and other expenses for all functions. Salaries for the exceptional education teachers, classroom aides, mainstream aides, and speech therapists for the hearing impaired were estimated based on the average salary for the host school district as reported by the Florida Department of Education. The salaries for the school psychologist, social worker, and nurse were estimated based on actual salary for the 1985-86 school year. Benefits were calculated for these specific positions based on actual percentages and amounts for the 1985-86 school year. An estimated cost per weighted FTE for a within the district program was calculated and compared to the cost per weighted FTE for the multidistrict program.

The final part of question one was analyzed by comparing the total cost of the multidistrict program to the revenues generated by the Florida Education Finance Program (FEFP) formula. The revenues collected were calculated from the weighted full-time equivalency (WFTE) earned and the base student allocation of $1,782.79 for the 1985-86 school year. This was calculated to determine if there was a relationship to the support generated by the Florida Education Finance Program.

In the second question, the costs of a multidistrict program generated by the participating districts were examined. A total cost per district was calculated using the expenditure components in Table 4. The aggregate FTE generated revenues were compared to the total cost to determine the relationship to the revenues generated by the Florida Education Finance Program.

The final question was focused on the estimated costs that would have been generated for participating districts if a within the district program had been designed and used by each district. The estimated costs of the programs were determined by utilizing the average costs of those functions and objects based on the reported cost in the 1985-86 Program Cost Analysis Report for each participating district. The objects calculated in this manner were purchased services, materials and supplies, capital outlay, and other expenses for all functions. Salaries for teachers, classroom aides, and mainstream aides were

estimated based on the average salary for the participating districts as reported by the Florida Department of Education. Benefits were calculated for teacher and aide positions based on the actual percentages and amounts for the 1985-86 school year. The physical and occupational therapy services were estimated on a purchased services basis at the hourly rate used by the specific school district during the 1985-86 school year. An estimated cost per weighted FTE was calculated. Then, an estimated total program cost was calculated and compared to the revenues that would have been generated under the Florida Education Finance Program. Finally, the information calculated in question two and question three were compared to provide the participating district leaders with alternative options for establishing programs for physically impaired and hearing impaired students.

Summary

The development of the cost models set forth in this chapter involved five components: (a) identification of expenditure components, (b) development of a method for allocating district and school level indirect costs, (c) establishment of data collection methods, (d) determination of costs, and (f) calculation of generated program revenues. The expenditure components were classified into three functions: instruction, instructional support services, and general support services. The expenditure components for the host districts are displayed in Table 3 and the expenditure components for

the participating districts are listed in Table 4. Indirect costs as expenditure components were not considered in this study if they were reattributive but costs that were directly related to the provision of specialized services to the physically impaired or hearing impaired in the multidistrict programs were utilized.

The following types of data were collected: (a) financial data by program, function, and object, (b) FTE information on the selected students identified in the study, and (c) interview information from the local exceptional student education program administrators. A description of the types of data needed, the source of the data, and how the data were collected were detailed.

When financial data are applied to the cost models, a series of program costs are determined. The cost models were used to determine the following costs:

1. A cost per weighted FTE and the total cost in a multidistrict program,
2. An estimated cost per weighted FTE and the total cost for a within the district program for the host district,
3. A total cost for each participating district to participate in the multidistrict program, and
4. An estimated per weighted FTE and the total cost for each participating district for a within the district program.

In addition, a number of program revenues were generated. The program revenues generated were as follows:

1. Revenues generated for the host district,
2. Revenues generated for the participating district, and
3. Revenues generated for the comparable replication programs designed as within the district programs for the host and participating districts.

In Chapter IV, the results of implementing the cost models in selected multidistrict programs for the physically impaired and hearing impaired are reported. The program cost data and generated revenues will allow the school district policy-makers to consider alternative delivery systems for exceptional students.

CHAPTER IV
IMPLEMENTATION OF COST MODELS

The results of implementing cost models developed in this study are discussed in this chapter. The cost models were designed to determine if excess costs are incurred by the host and participating districts in multidistrict exceptional education programs. Separate cost models were developed for the host and participating districts. The development of the cost models was based on the following components: (a) identification of expenditure components, (b) development of a method for allocating district and school level indirect costs that reflected actual costs rather than reattributive costs, (c) establishment of data collection methods, (d) determination of costs, and (e) calculation of generated program revenues.

When financial data are applied to the cost models, specific program costs are determined. The following cost information was generated by the cost models: (a) a cost per weighted FTE and the total cost of a multidistrict program generated for the host district, (b) an estimated cost per weighted FTE and the total cost for a within the district program for the host district, (c) a total cost for each participating district to participate in the multidistrict program, and (d) an estimated per weighted FTE and the total cost for each participating district for a within the district program. In

addition, a number of program revenues are generated. The program revenues generated were (a) revenues generated for the host district, (b) revenues generated for the participating district, and (c) revenues generated for the comparable replication programs designed as within the district programs for the host and participating districts. Chapter IV will include a presentation and analysis of the data collected on selected physically impaired and hearing impaired multidistrict exceptional education programs.

Host District Model Implementation

The host district was a school district in the crown region of Florida in which the staff provided two multidistrict exceptional student education programs for 10 participating districts. Specialized services were provided for physically impaired and hearing impaired students in the 11 school districts. The total student population of the host school district for the 1985-86 school year was 22,774. Physically impaired students totaling 65.5 and 58.5 hearing impaired students were served through the two multidistrict exceptional education programs. The expenditures involved in hosting the multidistrict programs were salaries and benefits for exceptional education teachers and teacher aides; salaries and benefits for mainstream aides; purchased services that included contracting for audiological evaluations; maintenance of auditory trainers, and physical therapy services, salary and benefits for a nurse for the physically impaired,

salary and benefits for a social worker and a school psychologist for the hearing impaired; materials and supplies, other expenses, and capital outlay

Administrators in the host district had considered establishing a within the district program but had not implemented one because of the commitment to the participating districts. Administrators in the host district stated that some of the advantages for hosting a multidistrict program were that the additional students permitted better grouping of students by age and that the host district's students did not have to travel outside the district to receive appropriate services. The disadvantages for the host district were that it utilized the program supervisor's time, the host district lost money, it created a large group of personnel to network, there was additional paperwork for an audit trail, it was difficult and time consuming to keep the participating districts staffs informed of upcoming activities, it utilized facilities that could be used for other programs, and it overtaxed the transportation system.

Physically Impaired Multidistrict Program

A physical impairment is "a physically disabling condition or other health impairment which required an adaptation to the student's school environment or curriculum" (Florida State Board Rule 6A-6.03015 (1), 1983). A student was eligible for a program for the physically

impaired if the student had an impairment which substantially limits one or more of the student's major life activities, and had:

1. Muscular or neuromuscular handicaps which significantly limit the ability to move about, sit, or manipulate the materials required for learning; or
2. Skeletal deformities or abnormalities which affect ambulation, posture, and body use necessary for school work; or
3. Disabilities which result in reduced efficiency in school work because of temporary or chronic lack of strength, vitality, or alertness.

(Florida State Board Rule 6A-6.03015 (2), 1983)

The host district staff provided services to 65.5 physically impaired students and earned 248.60 weighted full-time equivalents (WFTE) during the 1985-86 school year. The program included a 180-day school year program as well as a 6-week summer program. The classes were housed in regular elementary, middle, and high schools in the host district. The elementary program consisted of four teachers of the physically impaired, four aides, one mainstream aide, and one nurse. The middle school program consisted of one teacher of the physically impaired, one aide, and one mainstream aide. The high school program consisted of one teacher of the physically impaired, one aide, and one mainstream aide. The students were placed in various program options based on their individual needs with some students in the physically impaired program full time and other students in the basic education program for a large portion of the day. Related services such as speech therapy, occupational therapy, and physical therapy were

available to all students on an individual basis as needed. A mainstream program was also available to all students on an individual basis as required. In the mainstream program an aide was provided for students in their basic classrooms for various scheduled lengths of time.

The cost data for the physically impaired program were collected from the host district's annual financial reports and program cost reports, Program Cost Analysis Report Series, 1985-86 (Florida Department of Education, 1987a), Programs for Exceptional Students Annual Report, 1985-86 (Florida Department of Education, 1987b) personnel office records, exceptional education office records, and the district and school level full-time equivalent survey forms for the four FTE counts in 1985-86. The data were collected through the Florida Department of Education, the host district's finance, personnel, and exceptional education departments, and the three schools that housed the physically impaired program.

Expenditures and revenues

The expenditures for the host district included salaries and benefits for six teachers of the physically impaired, six aides, three mainstream aides, one school nurse, occupational therapy services, physical therapy services, and speech and language therapy services. In addition, expenditures included purchased services, materials and supplies, other expenses, and capital outlay. The total expenditures were $278,930.23. This included expenditures in the functions of

exceptional student education instruction, basic instruction, and instructional support. There were no identified direct cost expenditures in the general support function.

The exceptional education instruction function had expenditures of $231,072.47 from Florida Education Finance Program and $11,001.98 from federal funds which is a total of $242,074.45 in expenditures in the exceptional education instruction function. The basic instruction function had expenditures only from federal funds with a total of $26,311.92. The instruction support function had expenditures only from federal funds with a total of $10,543.86. The specific expenditures are displayed in Tables 5, 6, 7, and 8.

Table 5

Host District Expenditures for the Physically Impaired Program

Function	Florida Education Finance Program Funds	Federal Funds
Exceptional Education Instruction	231,072.47	11,001.98
Basic Instruction		26,311.92
Instructional Support		10,543.86
Total	231,072.47	47,857.76

Table 6

Host District Exceptional Student Education Instruction Expenditures for Physically Impaired

Expenditures	Florida Education Finance Program Funds	Federal Funds
Salaries	180,634.70	
Employee Benefits	40,991.41	
Purchased Services	2,441 91	
Materials and Supplies	2,726.79	
Other Expenses	4,156.61	888.83
Capital Outlay	121 05	10,113.15
Total	231,072.47	11,001.98

Table 7

Host District Basic Instruction Expenditures for Physically Impaired

Expenditures	Florida Education Finance Program Funds	Federal Funds
Salaries		20,428.10
Employee Benefits		5,883.82
Purchased Services		
Materials and Supplies		
Other Expenses		
Capital Outlay		
Total		26,311.92

Table 8

Host District Instructional Support Expenditures for Physically Impaired

Expenditures	Florida Education Finance Program Funds	Federal Funds
Salaries		7,126.56
Employee Benefits		1,908.32
Purchased Services		544.98
Materials and Supplies		
Other Expenses		
Capital Outlay		
Total		10,543.86

The total expenditures for the physically impaired program for the 1985-86 school year were $278,930.23. The physically impaired students earned 248.60 weighted FTE during the 1985-86 school year which would be a cost of $1,122.00 per weighted FTE.

The revenues generated were through the physically impaired FTE, basic mainstream FTE, physical/occupational therapy FTE, speech and language FTE, basic FTE, visually handicapped FTE, hospital/homebound FTE, vocational FTE, seventh-period allocation, and P.L. 94-142

federal funds. The revenues generated based on the students' 1985-86 schedules were $259,805.98 from the physically impaired FTE, $27,544.11 from basic mainstream FTE, $103,562.27 from physical/occupational therapy, $23,818.07 from speech and language FTE, $23,443.69 from basic FTE, $2,103.69 from visually handicapped FTE, $2,050.21 from hospital/homebound, $873.57 from vocational FTE, $2,092.43 from seventh-period allocation, and $13,585.00 from federal funds. The total revenues generated for the physically impaired were $458,879.02. In comparing the revenues of $458,879.02 to the expenditures of $278,930.23, it was determined that the revenues exceeded the expenditures by $179,948.79.

Comparable replication program

A within the district program was developed for the host district to provide alternatives from which the district leaders could select their method of providing services to their physically impaired students. The district staff would have had to provide services to 48 physically impaired students. The types of students who would have been served are displayed in Table 9.

Based on the number of students, the host district leaders would have needed to employ a minimum of five teachers of the physically impaired, three aides, two mainstream aides, and one nurse and provide physical, occupational, and speech therapy services. In addition, to provide the same type of service provided through the multidistrict program,

Table 9

Host District Students for a Physically Impaired Comparable Replication Program

Grade	Number of Students	Physically Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Speech WFTE	Vocational WFTE	Other ESE Programs WFTE
PK	8.5	27.95			10.38	0.36		
K	4	5.34	2.19	0.61	4.47	0.61		
1	7	11.36	2.85	1.29	6.86	1.51		1.18 (VH PI)
2	5	10.90	1.18	0.48	5.83	2.18		
3	8	13.74	0.70	2.08	3.99	1.57		1.15 (H/S PI)
4	1.5	2.38	0.84	0.10	0.48			
5	3	4.30	1.53	0.58	1.68			
6	1	0.12	0.41	0.88	0.96			
7	2.5	8.60			1.84	0.85		
8	2	4.41	0.07	1.52	0.18			
9	3	7.45	0.53	0.86	1.44	0.87		
10	1.5	3.99	0.29		0.72	0.36	0.25	
11	0							
12	3	8.64	0.19	0.72	1.44	0.24	0.24	
Total	48	109.18	10.78	9.12	40.25	8.35	0.49	2.33

the services of at least four teachers of the physically impaired and one aide would have been required during the summer. The estimated expenditures are listed in Table 10.

Table 10

Host District Expenditures for a Physically Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	172,630.52	7,126.56	
Employee Benefits	41,302.61	1,908.32	
Purchased Services	9,614 19		
Materials and Supplies	1,987 16		
Capital Outlay	79.10		
Other Expenses	2,896 16		
Total	228,509.73	9,034.88	

The estimated expenditures for a within the district physically impaired program would have been $237,544.61. The physically impaired students from the host district would have earned 180.50 weighted FTE during the 1985-86 school year which would have resulted in an estimated cost of $1,316.04 per weighted FTE.

The estimated physically impaired revenues generated based on the students' 1985-86 schedules would have been $194,645.01 from the physically impaired FTE, $16,259.04 from the basic mainstream FTE, $71,757.30 from physical/occupational therapy FTE, $14,886.30 from speech and language FTE, $19,218.48 from basic FTE, $873.57 from vocational FTE, $2,103.69 from visually handicapped part-time FTE, $2,050.21 from homebound FTE, $1,364.63 from seventh-period allocation, and $10,032.00 from federal funds. The total estimated revenues generated for the physically impaired would have been $333,190.23. In comparing estimated revenues of $333,190.23 to the estimated expenditures of $237,544.61, it was determined that estimated revenues would have exceeded the estimated expenditures by $95,645.62.

Hearing Impaired Multidistrict Program

A hearing impairment was "a hearing loss of 30 decibels or greater, pure tone average of 500, 1000, 2000 Hz, ANSI, unaided, in the better ear" (Florida State Board Rule 6A-6.03013 (1), 1984). A student was eligible for a special program for the hearing impaired if the student met the following criteria:

1. Evidence of a hearing impairment of thirty (30) decibel or greater, pure tone average of 500, 1000, 2000 Hz, ANSI, unaided, in the better ear.
2. Evidence that the hearing impairment has the potential to adversely affect the student's academic performance, social development, language development, communication skills or intellectual functioning. (Florida State Board Rule 6A-6.03013 (2) (a), (2) (b), 1984).

The host district staff provided services to 58.5 hearing impaired students and earned 202.97 weighted FTE for the 1985-86 school year. The

programs included a 180-day school year program as well as a 6-week summer programs. The classes were housed in regular elementary, middle, and high schools facilities. The elementary program consisted of three teachers of the hearing impaired, one speech clinician, four aides, and one interpreter of the hearing impaired. The middle school program consisted of one teacher of the hearing impaired, one aide, and one interpreter of the hearing impaired. The high school program consisted of one teacher of the hearing impaired, one aide, and one interpreter. One social worker and one school psychologist were provided for the hearing impaired students in all three schools. The students were placed in various program options based on their individual needs with some students in the hearing impaired program full time and other students in the basic education program for a portion of the day. Related services such as speech therapy, occupational therapy, and physical therapy were available to all students on an individual basis as needed. A mainstream program was also available to all students on an individual basis as required In the mainstream program, an interpreter was provided for students in their basic classrooms for various scheduled lengths of time.

The cost data for the hearing impaired programs were collected from the host district's annual financial reports and program cost reports, Program Cost Analysis Report Series, 1985-86 (Florida Department of Education, 1987a), Programs for Exceptional Students Annual Report, 1985-86 (Florida Department of Education, 1987b),

personnel office records, exceptional education office records, and the district and school level full-time equivalent survey forms for the four FTE counts in 1985-86. The data were collected through the Florida Department of Education, the host district's finance, personnel, and exceptional education departments, and the three schools that housed the hearing impaired classes.

Expenditures and revenues

The expenditures for the host district included salaries and benefits for five teachers of the hearing impaired, six classroom aides, three mainstream interpreters, one speech clinician, one social worker, and one school psychologist. In addition, expenditures included purchased services, materials and supplies, other expenses, and capital outlay. The total expenditures were $256,679.75. This included expenditures in the exceptional student education instruction function, basic education instruction function, and instructional support function. There were no identified direct cost expenditures in the general support function.

The exceptional student education instruction function had expenditures of $176,062.07 from Florida Education Finance Program and $7,789.16 from federal funds which is a total of $183,851.23 in the exceptional student education instruction function. The basic education instruction function had expenditures only from federal funds with a total of $28,419.86. The instructional support function

had expenditures only from federal funds with a total of $44,408.06.

The specific expenditures are displayed in Tables 11, 12, 13, and 14.

Table 11

Host District Expenditures for Multidistrict Program for Hearing Impaired

Expenditure Objects	Florida Education Finance Program Funds	Federal Funds
Exceptional Student Education	176,062.07	7,789.76
Basic Instruction		28,419.86
Instructional Support		44,408.06
Total	176,062.07	80,617.68

Table 12

Host District Exceptional Student Education Instruction
Expenditures for Hearing Impaired

Expenditure Objects	Florida Education Finance Program Funds	Federal Funds
Salaries	135,408.00	
Employee Benefits	30,554.07	
Purchased Services	5,703.00	2,000.00
Materials and Supplies	2,155.00	1,921.63
Other Expenses	2,118.00	
Capital Outlay	124.00	3,868.13
Total	176,062.07	7,789.76

Table 13

Host District Basic Instruction Expenditure for the Hearing Impaired

Expenditure Objects	Florida Education Finance Program Funds	Federal Funds
Salaries		22,187.20
Employee Benefits		6,232.66
Purchased Services		
Materials and Supplies		
Other Expenses		
Capital Outlay		
Total		28,419.86

Table 14

Host District Instructional Support Expenditures for the Hearing Impaired

Expenditure Objects	Florida Education Finance Program Funds	Federal Funds
Salaries		34,545.56
Employee Benefits		8,062 50
Purchased Services		1,800.00
Materials and Supplies		
Other Expenses		
Capital Outlay		
Total		44,408 06

The total expenditures of the hearing impaired program for the 1985-86 school year were $256,679.75. The hearing impaired students earned 202.97 weighted FTE during the 1985-86 school year which would be a cost of $1,264 62 per weighted FTE.

The revenues generated were through the hearing impaired FTE, basic mainstream FTE, basic FTE, physical/occupational FTE, vocational FTE, seventh-period allocation, and P.L. 94-142 federal funds. The revenues generated based on the students' 1985-86 schedules were

$313,681.90 from the hearing impaired FTE, $28,506.81 from basic mainstream FTE, $16,686.91 from basic FTE, $998.36 from physical/occupational therapy FTE, $1,978.90 from vocational FTE, $2,001.45 from seventh-period allocation, and $12,122.00 from federal funds. The total revenues generated for the hearing impaired program were $375,976.33. In comparing the revenues of $375,976.33 to the expenditures of $256,679.75, it was determined that the revenues exceeded the expenditures by $119,296.58.

Comparable replication program

A within the district program was developed for the host district to provide alternatives from which the district leaders could select their method of providing services to their hearing impaired students. The district staff would have had to provide services to 22 hearing impaired students. The types of students who would have been served are displayed in Table 15.

Based on the number of students, the host district leaders would have needed to employ a minimum of four teachers of the hearing impaired, one-half time speech clinician, two mainstream interpreters, one-half time school psychologist, and one-half time school social worker. In addition, to provide the same type of service provided through the multidistrict program, the services of at least three hearing impaired teachers would have been required during the summer. The estimated expenditures would have been $160,539.10. The specific estimated expenditures are displayed in Table 16.

Table 15

Host District Students for a Hearing Impaired Comparable Replication Program

Grade	Number of Students	Hearing Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Vocational WFTE
PK	1.5	6.63				
K	3	10.91	0.40		0.56	
1	2.5	9.95	0.37	0.14		
2	2	7.11	0.09	0.63		
3	2	5.83	0.56	0.32		
4	2	4.55	0.20	1.54		
5	1	2.76	0.12	0.44		
6	1	3.04	0.28			
7	0					
8	2	4.11	0.93	0.28		
9	1	1.08		1.70		
10	1	4.19				
11	2	2.92	0.26	2.45		
12	1	2.92				0.48
Total	22	65.80	3.21	7.50	0.56	0.48

Table 16

Host District Expenditures for a Hearing Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	109,446.06	17,272.78	
Employee Benefits	25,669.26	4,031.25	
Purchased Services	2,233.62		
Materials and Supplies	860.57		
Capital Outlay	54.93		
Other Expenses	970.43		
Total	139,235.07	21,304.03	

The estimated expenditures for a within the district hearing impaired program would have been $160,539 10 The hearing impaired students from the host district would have earned 77.55 weighted FTE during the 1985-86 school year which would have resulted in an estimated cost of $2,070.14 per weighted FTE.

The estimated hearing impaired revenues generated based on the students' 1985-86 schedules would have been $117,307 58 from the hearing impaired FTE, $13,370 93 from basic mainstream FTE, $5,722.76 from basic FTE, $998.36 from physical/occupational therapy FTE, $855.74

from vocational FTE, $909.75 from seventh-period allocation, and $4,598.00 from federal funds. The total estimated revenues generated would have been $143,763.12. In comparing the estimated revenues of $143,763.12 to the estimated expenditures of $160,539.10, it was determined that the estimated expenditures would have exceeded the estimated revenues by $16,775.98.

Participating Districts Model Implementation

The participating districts were 10 school districts in the crown region of Florida whose students participated in the multidistrict physically impaired and hearing impaired programs. The total student population in the participating districts ranged from 1,475 through 24,735. Seventeen and one-half physically impaired and 36 5 hearing impaired students from the participating districts were sent to the host district.

Participating District A

Participating district A was a school district in the crown region of Florida with a total student population of 4,593 during the 1985-86 school year. Participating district A staff had multidistrict agreements to send their physically impaired and hearing impaired students to the host district. Five physically impaired and four hearing impaired students from participating district A were sent to the host district's program during the 1985-86 school year. The physically impaired and hearing impaired students were sent on one bus with one bus driver each day during the regular school year

and they participated in the 6-week summer program. The expenditures involved in the district's participation were the salary and benefits for the bus driver and gas, oil, grease, repair parts, tires, and tubes for the bus. The administrators in district A indicated they had never considered establishing a within the district program because they had too few students. For participating district A staff, the advantage of participating in a multidistrict program was that a program could be provided for a small number of students and the disadvantage was that the transportation costs were high.

Expenditures and revenues

The expenditures for participating district A included salary and benefits for the bus driver, gas, oil, grease, repair parts, tires, and tubes for the bus. The total expenditures were $14,478.15. The specific expenditures are itemized in Table 17.

The only revenues generated were through the transportation FTE. For the four FTE counts during the 1985-86 school year, participating district A earned $587.71 in direct transportation FTE. However, since Florida's transportation formula for each district was based on an individually calculated density index, participating district A's transportation FTE for the total district was recalculated without the bus trip to the host district. The density index was recalculated for the four FTE counts in 1985-86. The index was unchanged for the July, 1985, and the June, 1986, counts; however, for the October, 1985, and February, 1986, counts the density index was increased, therefore, the

district would have earned less per each transportation FTE without the trip to the host district. Participating district A earned an additional $15,667.12 for their total district transportation FTE with the trip to the host district. Therefore, the total revenues earned during the 1985-86 school year were $16,254.83. In comparing the total expenditures of $14,478.15 to the revenues generated of $16,254.38, it was determined that the revenues exceeded the expenditures by $1,776.23.

Table 17

Participating District A Expenditures

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries			7,619.40
Employee Benefits			2,358.75
Purchased Services			
Materials and Supplies			4,500.00
Capital Outlay			
Other Expenses			
Total			14,478.15

Comparable replications progra

A within the district program was developed for participating district A to provide alternatives from which the district leaders could select their method for providing services to their physically impaired and hearing impaired students. The district staff would have had to provide services to five physically impaired and four hearing impaired students. Shown in Tables 18 and 19 are the types of students who would have been served.

Based on the number of students, participating district A would have needed to employ a minimum of two teachers of the physically impaired and two teachers of the hearing impaired and provide physical and occupational therapy services. One mainstream aide for the physically impaired and one interpreter for the hearing impaired would also have been needed during the school year to continue the basic mainstream services for some students. In addition, to provide the same type of services provided through the host district, at least one teacher of the physically impaired and one teacher of the hearing impaired would have been needed during the summer.

The total estimated expenditures for the physically impaired program would have been $82,814.92. The physically impaired students would have earned an estimated 19 93 weighted FTE which would have translated into a cost of $4,155.29 per weighted FTE for the physically impaired program. The total estimated expenditures for the hearing impaired program would have been $65,360.50. The hearing impaired students would have earned an

Table 18

Participating District A Students for a Physically Impaired Comparable Replication Program

Grade	Number of Students	Physically Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Speech WFTE	Vocational WFTE	Other ESE Programs WFTE
PK	1	3.15			1.44			
K	1	2.92	0.02	0.05	1.52	0.48		
3	1	2.53	0.08	0.07	1.44	0.36		
8	1	1.07		1.20	0.48	0.36		
11	1	0.54	0.04	1.82	0.24	0.12		
Total	5	10.21	0.14	3.14	5.12	1.32		

Table 19

Participating District A Students for a Hearing Impaired Comparable Replicating Program

Grade	Number of Students	Hearing Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Vocational WFTE
3	1	4.00	0.08			
5	1	2.84	0.20	0.24		
8	1	1.16	0.51	0.56		
9	1	3.04	0.01	0.54		
Total	4	11.04	0.80	1.34		

estimated 13.18 weighted FTE which would have been a cost of $4,959.07 per weighted FTE for the hearing impaired program. The total estimated expenditures that would have been involved in establishing the physically impaired and hearing impaired programs were $148,782.92. The estimated expenditures are specified in Tables 20 and 21.

Table 20

Participating District A Estimated Expenditures for a Physically Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	49,297.90		
Employee Benefits	14,954.34		
Purchased Services	18,421.70		
Materials and Supplies	87.78		
Capital Outlay	23.94		
Other Expenses	29.26		
Total	82,814.92		

Table 21

Participating District A Estimated Expenditures for a Hearing Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	49,297.90		
Employee Benefits	14,954.34		
Purchased Services	969.40		
Materials and Supplies	86.46		
Capital Outlay	23.58		
Other Expenses	28.82		
Total	65,360.50		

The estimated physically impaired revenues generated based on the students' 1985-86 schedules would have been $18,202.29 from the physically impaired FTE, $5,597.96 from basic mainstream FTE, $249.59 from basic FTE, $2,353.28 from speech and language FTE, $9,127.88 from physical/occupational therapy FTE, $181.95 from seventh-period allocation, and $1,045.00 from federal funds. The total estimated revenues generated for the physically impaired would have been $36,757.95. In comparing the estimated revenues of $36,757.95 to the estimated expenditures of $82,814.92, it was determined that the estimated expenditures would have exceeded the revenues by $46,056.97.

The estimated hearing impaired revenues generated based on the students' 1985-86 schedules would have been $19,682.00 from the hearing impaired FTE, $2,388.94 from basic mainstream FTE, $1,426.23 from basic FTE, $181.95 from seventh-period allocation, and $836.00 from federal funds. The total estimated revenues generated for the hearing impaired program would have been $24,515.12. In comparing the estimated revenues of $24,515.12 to the estimated expenditures of $65,360.50, it was determined that the estimated expenditures would have exceeded the estimated revenues by $40,845.38.

Participating District 8

Participating district 8 was a school district in the crown region of Florida in which there was a total student population of 7,542 during the 1985-86 school year. Participating district 8 policy-makers

had multidistrict agreements to send their physically impaired and hearing impaired students to the host district. Three and one-half physically impaired and 11 hearing impaired students from participating district E were sent to the host district's programs during the 1985-86 school year. The physically impaired and hearing impaired students were sent on two buses with two bus drivers and one aide each day during the regular school year and they participated in the 6-week summer programs. The expenditures involved in the district's participation were the salaries and benefits for the bus drivers and bus aide, and gas, oil, grease, repair parts, tires, and tubes for the buses. The administrators in participating district E indicated they had considered establishing a within the district program but had not because of the projected expense. For participating district E leaders the advantage of participating in a multidistrict program was that there were enough students to provide appropriate age groupings and the disadvantage was that the students had a long bus ride.

Expenditures and revenues

The expenditures for participating district E included salaries and benefits for the bus drivers and bus aide and the gas, oil, grease, repair parts, tires, and tubes for the buses. The total expenditures were $36,180.76. The specific expenditures are itemized in Table 22.

Table 22

Participating District B Expenditures

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries			21,020.14
Employee Benefits			5,362.36
Purchased Services			
Materials and Supplies			9,798.26
Capital Outlay			
Other Expenses			
Total			36,180.76

The only revenues generated were through the transportation FTE. For the four FTE counts during the 1985-86 school year, participating district B earned $2,338.18 in direct transportation FTE. However, since Florida's transportation formula for each district was based on an individually calculated density index, participating district B's transportation FTE for the total district was recalculated for the four FTE counts in 1985-86. The index was unchanged for the July, 1985, and the June, 1986, counts; however, for the October, 1985, and February, 1986, counts the density index was increased, therefore, the district would have earned less per each transportation FTE without

the trip to the host district. Participating district B earned an additional $39,836.01 for their total district transportation FTE with the trip to the host district. The total revenues earned during the 1985-86 school year were $42,174.19. In comparing the total expenditures of $36,180.76 to the revenues generated of $42,174.19, it was determined that the revenues exceeded the expenditures by $5,993.43.

Comparable replication program

A within the district program was developed for participating district B to provide alternatives from which the district leaders could select their method of providing services to their physically impaired and hearing impaired students. The district staff would have had to provide services to 3.5 physically impaired and 11 hearing impaired students. Shown in Tables 23 and 24 are the types of students who would have been served.

Based on the number of students, participating district B would have needed to employ a minimum of four teachers of the hearing impaired and two teachers of the physically impaired and provide occupational and physical therapy services. One mainstream aide for the physically impaired and one interpreter for the hearing impaired would have been needed during the school year to continue the basic mainstream services for some students. In addition, to provide the same type of services provided through the multidistrict program, at least one teacher of the physically impaired and ten teachers of the hearing impaired would have been required during the summer.

Table 23

Participating District S Students for a Physically Impaired Comparable Replication Program

Grade	Number of Students	Physically Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Speech WFTE	Vocational WFTE	Other ESE Programs WFTE
K	1	2.96	0.02	0.05	1.44	0.48		
1	0.5	0.19	0.37	0.18	0.32			
4	1	0.23	0.77	0.18	0.64			
7	1	2.92			1.20	0.54		
Total	3.5	6.30	1.16	0.41	3.60	1.02		

Table 24

Participating District 5 Students for a Hearing Impaired Comparable Replication Program

Grade	Number of Students	Hearing Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Vocational WFTE
PK	2	8.39				
K	1	3.52	0.14			
1	1	4.07	0.02			
4	1.5	5.23	0.07	0.44		
5	2	6.43	0.06	0.88		
7	2	5.07	0.70	0.56		
9	0.5	1.68	0.20			
11	1	1.44	0.02	1.40		
Total	11	35.83	1.21	3.28		

The total estimated expenditures for the physically impaired program would have been $82,585.18. The physically impaired students would have earned an estimated 12.49 weighted FTE which would have been a cost of $6,612.10 per weighted FTE for the physically impaired.

The total estimated expenditures for the hearing impaired program would have been $118,806.23. The hearing impaired students would have

earned an estimated 40.32 weighted FTE which would have been a cost of $2,946.58 per weighted FTE for the hearing impaired program. The total estimated expenditures that would have been involved in establishing the physically impaired and hearing impaired programs would have been $201,391.41. The estimated expenditures are specified in Tables 25 and 26.

Table 25

Participating District Estimated Expenditures for a Physically Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	52,353.40		
Employee Benefits	11,576.90		
Purchased Services	18,513.84		
Materials and Supplies	86.92		
Capital Outlay	24.60		
Other Expenses	29.52		
Total	82,585.18		

Table 26

Participating District 8 Estimated Expenditures for a Hearing Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	96,503.80		
Employee Benefits	21,128.34		
Purchased Services	437.07		
Materials and Supplies	454.21		
Capital Outlay	128.55		
Other Expenses	154.26		
Total	118,806.23		

The estimated physically impaired revenues generated based on the students' 1985-86 schedules would have been $11,231.58 from the physically impaired FTE, $730.94 from basic mainstream FTE, $2,068.04 from basic FTE, $1,818.45 from speech and language FTE, $6,418.04 from physical and occupational therapy FTE, and $627.00 from federal funds. The total estimated revenues generated for physically impaired would have been $22,894.05. In comparing the estimated revenues of $22,894.05 to the estimated expenditures of $82,585.18, it was determined that the estimated expenditures would have exceeded the estimated revenues by $59,691.13.

The estimated hearing impaired revenues generated based on the students' 1985-86 schedules would have been $63,677.37 from the hearing impaired FTE, $5,847.55 from basic mainstream FTE, $2,157 18 from basic FTE, $363.90 from seventh-period allocation, and $2,299.00 from federal funds. The total estimated revenues generated for hearing impaired would have been $74,545.00. In comparing the estimated revenues of $74,545.00 to the estimated expenditures of $118,806.23, it was determined that the estimated expenditures would have exceeded the estimated revenues by $44,261.23.

Participating District C

Participating district C was a school district in the crown region of Florida where there was a total student population of 1,585 during the 1985-86 school year Participating district C policy-makers had multidistrict agreements to send their physically impaired and hearing impaired students to the multidistrict programs. One physically impaired student from participating district C was sent to the host district during the 1985-86 school year. Participating district C leaders provided transportation for the physically impaired student by contracting with a private individual to transport the student to the school district line where the student transferred to a school bus from the host district. The expenditures involved in the contracting were paying the individual an hourly wage and mileage. Administrators in participating district C stated they had never considered a within the

district program because there were not enough students, and it would not eliminate the costs. For participating district C leaders the advantage of participating in a multidistrict program was that the district staff could not offer appropriate services for such a small number of students and the disadvantage was the high transportation expense.

Expenditures and revenues

The expenditures for participating district C included salary and benefits for the contracted driver and mileage. The cost of contracting for the transportation service was $9,386.80.

The revenues generated were through the transportation FTE and participating district C received 20 cents a mile for two round trips of 50.5 miles. The total revenues generated were $7,272.00. Since this student was not transported on the participating district's school bus, it has no impact on the overall district's transportation FTE. In comparing the total expenditures of $9,386.80 to the revenues generated of $7,272.00, it was determined that the expenditures exceeded the revenues by $2,114.80.

Comparable replication program

A within the district program was developed for participating district C to provide alternatives from which the district leaders could select their method of providing services to their physically impaired student. The district staff would have needed to provide services to one physically impaired student. Displayed in Table 27 is the type of student who would have been served.

Table 27

Participating District C Students for a Physically Impaired Cooperable Replication

Grade	Number of Students	Physically Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Speech WFTE	Vocational WFTE	Other ESE Programs WFTE
11	1	3.38			0.48	0.36		
Total	1	3.38			0.48	0.36		

Based on the number of students participating district C leaders would have needed to employ a minimum of one physically impaired teacher. The estimated expenditures that would have been involved in establishing the class was $22,942.47. The physically impaired student would have earned an estimated 4.22 weighted FTE which was a cost of $5,436.60 per weighted FTE for the physically impaired program. The estimated expenditures are listed in Table 28

Table 28

Participating District C Estimated Expenditures for a Physically Impaired Comparable Replication Program

Expenditure	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	18,118.00		
Employee Benefits	4,343.99		
Purchased Services	370.48		
Materials and Supplies	56.32		
Capital Outlay	10.56		
Other Expenses	43.12		
Total	22,942.47		

The estimated physically impaired revenues generated based on the student's 1985-86 schedule would have been $6,025.83 from the physically impaired FTE, $855.74 from occupational and physical therapy FTE, $531.80 from speech and language FTE, $181.95 from seventh-period allocation, and $209.00 from federal funds. The total estimated revenues generated for physically impaired would have been $7,914.32. In comparing the estimated revenues of $7,914.32 to the estimated expenditures of $22,942.47, it was determined that the estimated expenditures exceeded the estimated revenues by $15,028.15.

Participating District D

Participating district D was a school district in the crown region of Florida with a 1985-86 total student population of 1,475. Participating district D leaders had multidistrict agreements to send their physically impaired and hearing impaired students to the host district. During the 1985-86 school year, district D had no students eligible to participate in the multidistrict programs. When participating district D had students participating, the expenditures involved were contracting with a private person to take the students in their vehicle to the host district. Administrators in participating district D indicated they had never considered establishing a within the district program because they could not afford it with the small number of students involved. For participating district D policy-makers the advantage of the multidistrict programs were that appropriate numbers

of students could be grouped together to make the program feasible and the disadvantages were the long ride for the students and finding someone willing to drive the students.

Expenditures and revenues

Participating district D had no physically impaired or hearing impaired students during the 1985-86 school year. Therefore, no expenditures were incurred and no revenues were generated. Thus there were no comparisons that could be made between expenditures and revenues.

Comparable replication program

Participating district D had no physically impaired or hearing impaired students during the 1985-86 school year. Thus as within the district program could be developed to provide alternatives from which the district leaders could select other methods for providing services to their physically impaired or hearing impaired students.

Participating District E

Participating district E was a school district in the crown region of Florida with a 1985-86 total student population of 2,284. Participating district E policy-makers had multidistrict agreements to send their physically impaired and hearing impaired students to the host district. During the 1985-86 school year, participating district E had no students eligible to participate in the multidistrict programs. When participating district E had students participating,

the expenditures involved the salary and benefits for the bus driver and gas, oil, grease, repair parts, tires, and tubes for the bus. Administrators in participating district E stated they had never considered establishing a within the district program because they did not have enough students. For participating district F staff the advantage of participating in a multidistrict program was that a program could be provided for a small number of students and the disadvantage was the long bus ride for the students.

Expenditures and revenues

Participating district F had no physically impaired or hearing impaired students during the 1985-86 school year. Therefore, no expenditures were incurred and no revenues were generated. Thus there were no comparisons that could be made between expenditures and revenues.

Comparable replication program

Participating district F had no physically impaired or hearing impaired students during the 1985-86 school year. Thus no within the district program could be developed to provide alternatives from which the district leaders could select other methods for providing services to their hearing impaired or physically impaired students.

Participating District F

Participating district F was a school district in the crown region of Florida with a total student population of 4,272 during

the 1985-86 school year. Participating district F administrators had multidistrict agreements to send their physically impaired and hearing impaired students to the host district. One physically impaired and two and one-half hearing impaired students from participating district F were sent to the host district's programs during the 1985-86 school year. The district incurred no expenses in transporting the students to the host district. A bus driver from the host district lived in participating district F and "picked up" the students on the way into the host district. Administrators in participating district F stated they had considered initiating a program, but because the ages of the pupils were so widespread, they never established a program. For participating district F leaders the advantages of a multidistrict program were that they were able to have enough students to provide classes for various age groups and to provide more specific resources such as interpreters. For participating district F leaders the disadvantages were that the students had a long bus ride and the participating district staff had very little contact with the parent and child once the child began to receive service from the host district.

Expenditures and revenues

Participating district F incurred no expenses because of their participation in the multidistrict exceptional education programs. In addition, no revenues were generated, therefore, no comparisons could be made between the expenditures and revenues.

Comparable replication program

A within the district program was developed for participating district F to provide alternatives from which the district policy-makers could select their method of providing services to their physically impaired and hearing impaired students. The district staff would have needed to provide services to one physically impaired and two and one-half hearing impaired students. Displayed in Tables 29 and 30 are the types of students who would have been served

Based on the number of students, participating district F administrators would have needed to employ a minimum of one teacher of the physically impaired and two teachers of the hearing impaired and provide occupational and physical therapy services. In addition, to provide the same type of services provided through the host district, a one-half time mainstream aide for the physically impaired and one-half time interpreter aide would have been required to continue the basic mainstream services for some students

The total estimated expenditures for the physically impaired program would have been $39,388 25. The physically impaired students would have earned an estimated 4.47 weighted FTE which would have resulted in $8,811.69 per weighted FTE for the physically impaired program. The total estimated expenditures for the hearing impaired program would have been $58,329.13. The hearing impaired students would have earned an estimated 7.53 weighted FTE which would have been

Table 29

Participating District F Students for a Physically Impaired Comparable Replication Program

Grade	Number of Students	Physically Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Speech WFTE	Vocational WFTE	Other ESE Programs WFTE
5	1	2.23	0.08	0.24	1.44	0.48		

$7,746.23 per weighted FTE for the hearing impaired program. The total estimated expenditures that would have been involved in establishing the physically impaired and hearing impaired programs were $97,717.38. The estimated expenditures are specified in Tables 31 and 32.

Table 30

Participating District F Students for a Hearing Impaired Comparable Replication Program

Grade	Number of Students	Hearing Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Vocational WFTE
2	1	3.36	0.02	0.32		
6	0.5	0.84	0.29			
7	1	1.96	0.28	0.28		0.18
Total	2.5	6.16	0.59	0.60		0.18

Table 31

Participating District F Estimated Expenditures for a Physically Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	25,149.00		
Employee Benefits	6,241.01		
Purchased Services	7,850.34		
Materials and Supplies	87.58		
Capital Outlay	18.56		
Other Expenses	41.76		
Total	39,388.25		

Table 32

Participating District F Estimated Expenditures for a Hearing Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	46,361.00		
Employee Benefits	11,283.35		
Purchased Services	427.23		
Materials and Supplies	152.51		
Capital Outlay	32.32		
Other Expenses	72.72		
Total	58,329.13		

The estimated physically impaired revenues generated based on the students' 1985-86 schedules would have been $3,975.62 from the physically impaired FTE, $427.87 from the basic mainstream FTE, $2,567.22 from physical and occupational therapy FTE, $142.62 from basic FTE, $855.74 from speech and language FTE, and $209.00 from federal funds. The total estimated revenues generated for the physically impaired would have been $8,178.07. In comparing the estimated revenues of $8,178.07 to the estimated expenditures of $39,388.25, it was determined that the estimated expenditures exceeded the estimated revenues by $31,210.18.

The estimated hearing impaired revenues generated based on the students' 1985-86 schedules would have been $10,981.99 from the hearing impaired FTE, $1,059.67 from basic mainstream FTE, $1,051.85 from basic FTE, $320.90 from vocational FTE, and $418.00 from federal funds. The total estimated revenues generated for the hearing impaired would have been $13,842.41. In comparing the estimated revenues of $13,842.41 to the estimated expenditures of $58,329.13, it was determined that the estimated expenditures exceeded the estimated revenues by $44,486.72.

Participating District G

Participating district G was a school district in the central region of Florida with a total student population of 4,925 during the 1985-86 school year. Participating district G leaders had multidistrict

agreements to send their physically impaired and hearing impaired students to the host district. During the 1985-86 school year, five physically impaired students from participating district G were sent to the host district. The physically impaired students were sent on one school bus with one bus driver and two aides. The expenditures involved in the district's participation were the salaries and benefits for the bus driver and two bus aides and gas, oil, grease, repair parts, tires, and tubes for the bus. Administrators in participating district G stated that a within the district program would eliminate the transportation costs but a program had never been established because of the other high estimated costs. For participating district G administrators the advantage of a multidistrict program was that it provided a program for a district with a small number of students and the disadvantage was the high transportation cost.

Expenditures and revenues

The expenditures for participating district G administrators included salaries and benefits for the bus driver and two bus aides and gas, oil, grease, repair parts, tires, and tubes for the bus. The total expenditures were $34,943-87. The specific expenditures are itemized in Table 33.

Table 33

Participating District G Expenditures

Expenditure Objects	Instructional Costs	Instructional Support Costs	General Support Costs
Salaries			23,266 93
Employee Benefits			7,842.01
Purchased Services			
Materials and Supplies			3,834.93
Capital Outlay			
Other Expenses			
Total			34,943.87

The only revenues generated were through the transportation FTE. For the four FTE counts during the 1985-86 school year, participating district G earned $905.16 in direct transportation FTE. However, since Florida's transportation formula for each district was based on an individually calculated density index, participating district G's transportation FTE for the total district was recalculated without the bus trip to the host district. The density index was recalculated for the four FTE counts in 1985-86. The index was unchanged for the July, 1985, and June, 1986, counts because participating district G did not participate in the summer school program. However, for the October,

1985, and the February, 1986, counts the density index was increased, therefore the district earned less per each transportation FTE. Participating district G earned an additional $24,176.62 for their total district transportation FTE with the trip to the host district. The total revenues earned during the 1985-86 school year were $25,081.78. In comparing the total cost of $34,943.87 to the revenues generated of $25,081.78, it was determined that the expenditures exceeded the revenues by $9,862.09.

Comparable replication program

A within the district program was developed for participating district G to provide alternatives from which the district leaders could select their method of providing services to their physically impaired students. The district would have needed to provide services to five physically impaired students. Presented in Table 34 are the types of students who would have been served.

Based on the number of students, participating district G administrators would have needed to employ a minimum of two physically impaired teachers and provide physical and occupational therapy services. In addition, to provide the same type of services provided through the host district, one mainstream aide would also have been needed to continue the basic mainstream services to some students.

Table 34

Participating District G Students for a Physically Impaired Comparable Replication Program

Grade	Number of Students	Physically Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Speech WFTE	Vocational WFTE	Other ESE Programs WFTE
2	1	2.46	0.07		1.60	0.61		
4	1	2.84	0.10		1.28			
5	1	2.53	0.07	0.06	1.36	0.61		
7	1	0.81		1.36	0.88			
8	1	2.99			0.96	0.61		
Total	5	11.63	0.24	1.42	6.08	1.83		

The total estimated expenditures for the physically impaired program would have been $95,473.79. The physically impaired students would have earned an estimated 21.20 weighted FTE which was $4,503.48 per weighted FTE for the physically impaired program. The estimated expenditures are specified in Table 35.

Table 35

Participating District G Estimated Expenditures for a Physically Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	50,390.00		
Employee Benefits	13,222.11		
Purchased Services	31,382.94		
Materials and Supplies	303.00		
Capital Outlay	33.33		
Other Expenses	142.41		
Total	95,473.79		

The estimated physically impaired revenues generated based on the students' 1985-86 schedules would have been $20,733.85 from the physically impaired FTE, $2,531.56 from basic mainstream FTE, $10,839.37 from

occupational and physical therapy FTE, $427.87 from basic FTE, $3,262.51 from speech and language FTE, and $1,045.00 from federal funds. The total estimated revenues generated for the physically impaired program would have been $38,840.15. In comparing the estimated revenues of $38,840.16 to the estimated expenditures of $95,473.79, it was determined that the estimated expenditures exceeded the estimated revenues by $56,633.63.

Participating District H

Participating district H was a school district in the crown region of Florida with a total student population of 1,587 during the 1985-86 school year. Participating district H administrators had multidistrict agreements to send their physically impaired and hearing impaired students to the host district. Two physically impaired and one hearing impaired student from participating district H were sent to the host district's programs during the 1985-86 school year. The students were transported on a bus operated by a private business each day during the regular school year only. The expenditures involved in the district's participation was in contracting with the private business to take the students to the host district. Administrators in participating district H stated that a within the district program would eliminate the transportation costs but they had never given serious consideration to establishing a program because they had too few students. For participating

district H leaders, the advantage of participating in a multidistrict program was that they could provide services to low incidence students and the disadvantages were the long bus ride and other transportation difficulties.

Expenditures and revenues

The cost of contracting for the transportation services was $75.00 per day or a total of $13,500 for the year. The revenues generated were through the transportation FTE and participating district H received 20 cents a mile for two round trips to the school site of 198.4 miles. The total revenues earned during the 1985-86 school year were $7,142.00. In comparing the total expenditures of $13,500.00 to the revenues generated of $7,142.00, it was determined that the expenditures exceeded the revenues by $6,358.00

Comparable replication program

A within the district program was developed for participating district H to provide alternatives from which the district administrators could select their method of providing services to their physically impaired and hearing impaired students. The district would have needed to provide services to two physically impaired and one hearing impaired students. Displayed in Tables 36 and 37 are the types of students who would have been served.

Table 36

Participating District H Students for a Physically Impaired Comparable Replication Program

Grade	Number of Students	Physically Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Speech WFTE	Vocational WFTE	Other ESE Programs WFTE
9	1	0.61	0.67	0.58	0.16			
11	1	2.19	0.08	0.54	0.96			
Total	2	2.80	0.75	1.12	1.12			

Table 37

Participating District H Students for a Hearing Impaired Comparable Replication Program

Grade	Number of Students	Hearing Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Vocational WFTE
7	1	1.68	0.44	0.28		
Total	1	1.68	0.44	0.28		

Based on the number of students, participating district H administrators would have needed to employ a minimum of one teacher of the physically impaired and one teacher of the hearing impaired and provide occupational and physical therapy services. In addition, to provide the same type of services provided through the host district, one-half time mainstream aide for the physically impaired and one-half time interpreter would have been needed during the school year to continue the basic mainstream services for all the students.

The total estimated expenditures for the physically impaired would have been $32,221.89. The physically impaired students would have earned an estimated 5.79 weighted FTE which would have resulted in a cost of $5,565.09 per weighted FTE for the physically impaired program. The total estimated expenditures for the hearing impaired program would have been

$26,595 82. The hearing impaired students would have earned an estimated 2.40 weighted FTE which would have been a cost of $11,081.59 per weighted FTE for the hearing impaired program. The total estimated expenditures that would have been involved in establishing the physically impaired and hearing impaired programs were $58,817.71. The estimated expenditures are displayed in Tables 38 and 39.

Table 38

Participating District B Estimated Expenditures for a Physically Impaired Comparable Replication Program

Expenditure	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	20,638 00		
Employee Benefits	5,523.42		
Purchased Services	5,899.37		
Materials and Supplies	129.71		
Capital Outlay	11.68		
Other Expenses	19.71		
Total	32,221.89		

Table 39

Participating District H Estimated Expenditures for a Hearing Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	20,638.00		
Employee Benefits	5,523.42		
Purchased Services	347.60		
Materials and Supplies	70.80		
Capital Outlay	6.40		
Other Expenses	9.60		
Total	26,595.82		

The estimated physically impaired revenues generated based on the students' 1985-86 schedules would have been $4,991.81 from the physically impaired FTE, $1,996.72 from basic mainstream FTE, $1,996.72 from physical and occupational therapy FTE, $1,337.09 from basic FTE, $363.90 from seventh-period allocation, and $418.00 from federal funds. The total estimated revenues generated for physically impaired would have been $11,104.24. In comparing the estimated revenues of $11,104.24 to the expenditures of $32,221.89, it was determined that the estimated expenditures exceeded the estimated revenues by $21,117.65.

The estimated hearing impaired revenues generated based on the students' 1985-86 schedule would have been $2,995.09 from the hearing impaired FTE, $499.18 from basic mainstream FTE, $784.42 from basic FTE, and $209.00 from federal funds. The total estimated revenues generated for hearing impaired would have been $4,487.69. In comparing the estimated revenues of $4,487.69 to the estimated expenditures of $26,595.82, it was determined that the estimated expenditures exceeded the estimated revenues by $22,108.13.

Participating District I

Participating district I was a school district in the crown region of Florida with a total student population of 24,735 during the 1985-86 school year. Participating district I leaders had a multidistrict agreement with the host district to send their hearing impaired students for specialized services. During the 1985-86 school year, 10.5 hearing impaired students from participating district I were sent to the host district program. The hearing impaired students were sent on two buses with two drivers and one bus aide each day during the regular school year and they participated in the 6-week summer program. The expenditures involved in the district's participation were the salaries and benefits for the bus drivers and bus aide and the gas, oil, grease, repair parts, tires, and tubes for the buses. Administrators in participating district I stated they had not considered establishing a within the district program because they

did not believe that a within the district program would eliminate the program costs. For participating district I administrators the advantage of the multidistrict program was that the host district could have sufficient numbers of students to provide appropriate programs and the disadvantages were that the transportation costs were high and the students had a long bus ride.

Expenditures and revenues

The expenditures for participating district I included salaries and benefits for the bus drivers and bus aide and gas, oil, grease, repair parts, tires, and tubes for the two buses. The total expenditures were $41,396.18. The specific expenditures are displayed in Table 40.

The only revenues generated were through the transportation FTE. For the four counts during the 1985-86 school year, participating district I earned $1,450.76 in direct transportation FTE. However, since Florida's transportation formula for each district was based on an individually calculated density index was recalculated for the four FTE counts in 1985-86. The index was unchanged for the July, 1985, and the June, 1986, counts; however, for the October, 1985, and the February, 1986, counts, the density index was increased, therefore the district earned less money per each transportation FTE. Participating district I earned an additional $58,902.56 for their total district transportation FTE with the trip to the host district.

The total revenues earned during the 1985-86 school year was $60,353.32. In comparing the total expenditures of $41,396.18 to the revenues generated of $60,353.32, it was determined that the revenues exceeded the expenditures by $18,957.14.

Table 40

Participating District I Expenditures

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries			27,950.40
Employee Benefits			7,305.81
Purchased Services			
Materials and Supplies			6,139.97
Capital Outlay			
Other Expenses			
Total			41,396.18

Comparable replication program

A within the district program was developed for participating district I to provide alternatives from which the district policy-makers could select their method of providing services to the hearing impaired students. Participating district 1 would have needed to provide services to 10 5 hearing impaired students. The types of students who would have been served are displayed in Table 41.

Table 41

Participating District 1 Students for a Hearing Impaired Comparable Replication Program

Grade	Number of Students	Hearing Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Vocational WFTE
PK	1	4.00				
K	1	2.40	0.45			
1	1	4.03	0.07			
3	1	2.04	0.60			
4	1	2.23	0.03	0.82		
6	1	2.32	0.35	0.14		
7	1.5	3.36	0.43	0.28		0.18
8	1	3.08	0.21			0.09
11	1	1.12	0.24	1.15		
12	1	4.19				
Total	10.5	28.77	2.38	2.39		0.27

Based on the number of students, participating district 1 leaders would have needed to employ a minimum of four teachers of the hearing impaired. Two interpreters would also have been needed to be hired during the school year to continue the basic mainstream services for some students. In addition, to provide the same type of services provided

through the host district, at least two teachers of the hearing impaired would have been needed during the summer.

The total estimated expenditures for the hearing impaired program were $123,220.48. The hearing impaired students would have earned an estimated 33.81 weighted FTE which was a cost of $3,644.50 per weighted FTE for the hearing impaired program. The estimated expenditures are specified in Table 42.

Table 42

Participating District I Estimated Expenditures for a Hearing Impaired Comparable Replication Program

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	99,023.20		
Employee Benefits	23,155.28		
Purchased Services	172.00		
Materials and Supplies	378.40		
Capital Outlay	185.76		
Other Expenses	295.84		
Total	123,220.48		

The estimated hearing impaired revenues generated based on the students' 1985-86 schedules would have been $51,290.87 from the hearing impaired FTE, $4,260.87 from the basic mainstream FTE, $4,243.04 from basic FTE, $481.35 from vocational FTE, $363.90 from seventh-period allocation, and $2,299.00 from federal funds. The total estimated revenues generated for the hearing impaired program would have been $62,939.03. In comparing the estimated revenues of $62,939.03 to the estimated expenditures of $123,220.48, it was determined that the estimated expenditures exceeded the estimated revenues by $60,281.45.

Participating District J

Participating district J was a school district in the crown region of Florida in which there was a total student population of 10,531 during the 1985-86 school year. Participating district J leaders had a multidistrict agreement with the host district to send their hearing impaired students for specialized services. During the 1985-86 school year, seven and one-half hearing impaired students from participating district J were sent to the host district program. The hearing impaired students were sent on one bus with one bus driver each day during the regular school year and they participated in the 6-week summer school program. The expenditures for participating district J included salary and benefits for the bus driver and gas, oil, grease, repair parts, tires, and tubes for the bus. Administrators in participating district J stated they had considered establishing a

within the district program but did not have sufficient numbers of students to provide a program that would be approved by the state department of education. For participating district J leaders, the advantage of a multidistrict program was that it could provide a quality program for low incidence students and that the disadvantages were that the participating district staff had no control over the program provided, the students had to travel long periods on the bus, and the transportation costs were high.

Expenditures and revenues

The expenditures for participating district J included salary and benefits for the bus driver and gas, oil, grease, repair parts, tires, and tubes for the bus. The total expenditures were $16,930.52. The specific expenditures are displayed in Table 43.

The only revenues generated were through the transportation FTE. For the four counts during the 1985-86 school year, participating district J earned $1,425.78 in direct transportation FTE. However, since Florida's transportation formula for each district was based on an individually calculated density index, participating district J's transportation FTE for the total district was recalculated without the bus trip to the host district. The density index was recalculated for the four FTE counts in 1985-86. The index was unchanged for the July, 1985, and the June, 1986, counts, however, for the October, 1985, and February, 1986, counts the density index was increased; therefore, the

district earned less per each transportation FTE. Participating district J earned an additional $21,556.91 for their total district transportation FTE with the trip to the host district. The total revenues earned during the 1985-86 school year were $22,982.68. In comparing the total expenditures of $16,930.52 to the revenues generated of $22,982.68, it was determined that the revenues exceeded the expenditures by $6,052.17.

Table 43

Participating District J Expenditures

Expenditure Objects	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries			10,614.23
Employee Benefits			2,874.97
Purchased Services			
Materials and Supplies			3,441.32
Capital Outlay			
Other Expenses			
Total			16,930.52

Comparable replication program

A within the district progrse was developed for participating district J to provide alternatives from which the district administrators could select their method of providing services to hearing impaired students. Participating district J staff would have needed to provide services to seven and one-half hearing impaired students. The types of students who would have been served are displayed in Table 44.

Table 44

Participating District J Students for a Hearing Impaired Comparable Replication Program

Grade	Number of Students	Hearing Impaired WFTE	Basic WFTE	Mainstream WFTE	PT/OT WFTE	Vocational WFTE
PK	1	4.11				
K	1	3.68	0.14			
1	1.5	5.87	0.15			
2	1	3.48	0.07	0.32		
4	1	3.64	0.09			
7	1	1.89	0.28	0.28		0.18
10	1	4.00				
Total	7.5	26.67	0.73	0.60		0.18

Based on the number of students, participating district J would needed to employ a minimum of three teachers of the hearing impaired. One interpreter would also have been needed to be hired during the school year to continue the basic mainstream services for some students. In addition, to provide the same type of services provided through the host district, at least two teachers of the hearing impaired would have been needed during the summer.

The total estimated expenditures for the hearing impaired program would have been $87,999.39. The hearing impaired students would have earned an estimated 28.18 weighted FTE which was $3,122.76 per weighted FTE for the hearing impaired program. The estimated expenditures are specified in Table 45.

The estimated hearing impaired revenues generated based on the students' 1985-86 schedules would have been $47,547.01 from the hearing impaired FTE, $1,069.86 from basic mainstream FTE, $1,301.44 from basic FTE, $320.90 from vocational FTE, $181.95 from seventh-period allocation, and $1,463.00 from federal funds. The total estimated revenues generated for the hearing impaired program would have been $51,883.96. In comparing the estimated revenues of $51,883.96 to the estimated expenditures of $87,999.39, it was determined that the estimated expenditures exceeded the estimated revenues by $36,115.43.

Table 45

Participating District J Estimated Expenditures for a Hearing Impaired Comparable Program

Expenditure	Instruction Costs	Instructional Support Costs	General Support Costs
Salaries	69,370.44		
Employee Benefits	16,923.57		
Purchased Services	72.71		
Materials and Supplies	680.83		
Capital Outlay	244.57		
Other Expenses	707.27		
Total	87,999.39		

Summary of Implementation of the Cost Models

The implementation of the cost models provided specific cost information about the physically impaired and hearing impaired programs in two multidistrict programs in the crown region of Florida. The host district staff provided specialized services to 65.5 physically impaired and 58.5 hearing impaired students in the host district and in the 10 participating districts. The expenditures and revenues were calculated for the physically impaired and hearing impaired programs in the host district and in each of the participating districts. In addition, a comparable replication program was designed for each of the districts to

allow the district policy-makers to consider alternative delivery systems for their exceptional students. Expenditures and revenues were then estimated based on the comparable replication programs. A comparison was made between the estimated revenues and estimated expenditures to determine their relationship.

Specific cost information was calculated through the implementation of the cost models. The following cost data were provided: (a) a cost per weighted FTE and the total cost of a multidistrict program generated for the host district, (b) an estimated cost per weighted FTE and the total cost for a within the district program for the host district, (c) a total cost for each participating district to participate in the multidistrict program, and (d) an estimated weighted FTE and the total cost for each participating district for a within the district program.

In addition, a number of program revenues were generated. The program revenues generated were (a) revenues generated for the host district, (b) revenues generated for the participating district, and (c) revenues generated for the comparable replication programs designed as within the district programs for the host and participating districts. The expenditures and revenues for the multidistrict programs and the estimated expenditures and estimated revenues for the proposed within the district programs for the physically impaired and the hearing impaired programs are summarized in Tables 46, 47, 48, and 49. Summarized in Tables 50 and 51 are the expenditures,

Table 46

Multidistrict Physically Impaired Program

District	Number of Students	Weighted Student FTE Earned	Total Expenditures	Total Revenues	Cost per Student Weighted FTE
Host District	85.5	248.60	278,930 23	458,879 02	1,122.00
Participating District A	5		8,043 42	8,030 46	
Participating District B	3.5		8,793 29	10,170 98	
Participating District C	1		9,386.80	7,272 00	
Participating District D	0				
Participating District E	0				
Participating District F	1		0	0	
Participating District G	5		34,943 87	25,081 78	
Participating District H	2		9,000 00	4,761 33	
Participating District I	0				
Participating District J	0				

Note: Expenditures and revenues for districts A through J are related to transportation only

Table 47

Within the District Physically Impaired Program

District	Number of Students	Estimated Weighted Student FTE Earned	Estimated Expenditures	Estimated Revenue	Estimated Cost Per Student Weighted FTE
Host District	48	180 50	237 544,61	333,150 23	1 316 04
Participating District A	5	19 93	82,814 92	36,757 85	4,155 29
Participating District B	3.5	12 40	82,305 18	22,894 05	0,642 10
Participating District C	1	4 22	22,842 47	7 014,32	5.436 60
Participating District D	0				
Participating District E	0				
Participating District F	1	4 47	39 388 25	0 178 07	0-811 69
Participating District G	5	21 20	95,473-79	38 040-16	4-503 48
Participating District H	2	5 79	32,221 89	11,104 24	5,565 09
Participating District I	0				
Participating District J	0				

Note Expenditures and revenues do not include transportation.

Table 48

Multidistrict Hearing Impaired Program

District	Number of Students	Weighted Student FTE Earned	Total Expenditures	Total Revenues	Cost Per Student Weighted FTE
Host District	58 5	202 97	256 879 75	375 976 33	1 264 62
Participating District A	4		6 434 73	7,224 37	
Participating District B	11		27 447 47	31 954 21	
Participating District C	0				
Participating District D	2				
Participating District E	0				
Participating District F	2 5		0	0	
Participating District G	0				
Participating District H	1		4 500 00	2 380 67	
Participating District I	10 5		41,308 18	60 353 32	
Participating District J	7 5		18,930 52	22,982 89	

Note Expenditures and revenues for district A through J are related to transportation only

Table 49

Within the District Hearing Impaired Programs

District	Number of Students	Estimated Weighted Student FTE Served	Estimated Expenditures	Estimated Revenues	Estimated Cost Per Student Weighted FTE
Host District	22	77.55	160,539 10	143,763 12	2,070.14
Participating District A	4	11.18	65,360.50	24,515.12	4,959.07
Participating District B	11	40 32	118,806 23	74,545 00	2,946 58
Participating District D	0				
Participating District O	0				
Participating District K	0				
Participating District F	2 5	7 53	58,329 13	13,042 41	7,746 23
Participating District G	0				
Participating District H	1	2 40	26,595 02	4,487 69	11,081 50
Participating District I	10.5	33 01	123,220 48	02,939 03	3,644 50
Participating District J	7.5	28.18	07,909 39	51,803 96	3,422 76

Note Expenditures and revenues do not include transportation

revenues, and excess revenues for the multidistrict and within the district physically impaired and hearing impaired programs.

Table 50

Summary of Expenditures, Revenues, and Excess Revenues for the Physically Impaired Program

		Multidistrict Program	Within the District Program
Expenditures	Host District	278,930.23	237,544.61
	Participating Districts	0	355,426.50
Revenues	Host District	458,879 02	333,190.23
	Participating Districts	0	125,698.79
Excess Revenues	Host District	179,948.79	95,645.62
	Participating Districts	0	(229,737.71)

Note. Transportation is not included in the expenditures, revenues, and excess revenues.

Table 51

Summary of Expenditures, Revenues, and Excess Revenues for the Hearing Impaired Program

		Multidistrict Program	Within the District Program
Expenditures	Host District	256,679.75	160,539.10
	Participating Districts	0	480,311.55
Revenues	Host District	375,976.33	143,763.12
	Participating Districts	0	232,213.21
Excess Revenues	Host District	119,296.58	(16,775.98)
	Participating Districts	0	(248,098.34)

Note. Transportation is not included in the expenditure, revenues, and excess revenues.

The host district's expenditures for the multidistrict physically impaired program in 1985-86 were $278,950.23. The total revenues generated for the host district's physically impaired program were $458,879.02. In comparing the revenues to the expenditures for the host district, it was determined that the revenues exceeded the expenditures by $179,948.78. The participating districts only had expenditures and revenues in the area of transportation and had no program expenditures or revenues for the multidistrict program. Thus, no comparisons were made for the participating districts.

The host district's estimated expenditures for the within the district physically impaired program in 1985-86 would have been $237,544.61. The total estimated revenues generated for the host district would have been $333,190.23. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated revenues exceeded the estimated expenditures by $95,645.62 for the host district. The participating districts' total estimated expenditures for the within the district programs for the physically impaired in 1985-86 would have been $355,426.50. The total estimated revenues generated for the participating districts would have been $125,688.79. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $229,737.71 for the participating districts.

The host district's expenditures for the multidistrict hearing impaired program in 1985-86 were $256,679.75. The total revenues generated for the host district's hearing impaired program were $375,976.33. In comparing the revenues to the expenditures for the host district, it was determined that the revenues exceeded the expenditures by $119,296.58. The participating districts only had expenditures and revenues in the area of transportation and had no program expenditures or revenues for the multidistrict program. Thus, no comparisons were made for the participating districts.

The host district's estimated expenditures for the within the district hearing impaired program in 1985-86 would have been $160,539.10. The total estimated revenues generated for the host district would have been $143,763.12. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $16,775.98 for the host district. The participating districts' total estimated expenditures for the within the district programs for the hearing impaired in 1985-86 would have been $480,311.55. The total estimated revenues generated for the participating districts would have been $232,213.21. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $248,098.34 for the participating districts.

CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Since the passage of P.L. 94-142, The Education for All Handicapped Children Act of 1975, there have been increasing demands for an array of programs and services for identified handicapped students. In order to implement these new mandated programs, increased costs at the local district-level have been incurred. Some handicapping conditions have such a low incidence rate that it is difficult for school district personnel to identify sufficient numbers of students to provide an appropriate continuum of services. Leaders of districts with sparse student populations even find it difficult to provide appropriate services for handicapping conditions that have a higher incidence rate. Therefore, district administrators have to search for alternative organizational arrangements in order to provide effective and appropriate programs.

A search of the literature revealed that a growing number of students receive exceptional student education services through multidistrict programs. It was further emphasized that the role of the multidistrict program as the service provider for low incidence handicapped students appeared long enduring.

As the request for resources for handicapped students increases, the need for information concerning the costs of these programs becomes essential. School district administrators must analyze the cost expenditures of each program to determine what costs are involved in providing the programs. This allows the district policy-makers to assess the cost of various alternative program arrangements and utilize that information in the decision of program alternative selection.

Although studies had been completed on the cost of specific exceptionalities and the way in which this service is delivered within the local district, a method for determining the cost of exceptional education provided through a multidistrict program had not been developed. Therefore, this study was designed to determine if excess costs are incurred by the host and participating districts in multidistrict exceptional student education programs. The specific questions addressed were as follows:

1. Does a multidistrict program generate additional costs to a host district that would not be incurred in a within the district program and what is the relationship, if any, to the support generated by the Florida Education Finance Program?
2. Does a multidistrict program generate costs for the participating district and what is the relationship, if

any, to the support generated by the Florida Education Finance Program?

3 What estimated costs would be generated for participating districts if a within the district program was implemented in lieu of participating in a multidistrict program and what is the relationship, if any, to the support generated by the Florida Education Finance Program.

The investigation of the three questions was conducted in three phases. The first phase included a review of the literature in the area of multidistrict programs, cost studies in exceptional education, and studies on excess costs in educational programs. The information obtained from the first phase was used to develop resource cost models for the host and participating school districts in the second phase. The cost models contained the identification of expenditure components, the development of a method for allocating district and school level indirect costs that reflected actual costs rather than reattributive costs, the establishment of data collection methods, the determination of costs to develop a comparable replication program, and the calculation of the revenues generated by the programs. In the final phase, the host district and participating school districts in selected physically impaired and hearing impaired programs in the crown region of Florida were identified to implement the cost models

The first question of the study was answered by calculating the host district's expenditures and revenues for the physically impaired and hearing impaired multidistrict programs. The cost data were collected from the host district's annual financial reports and program cost reports, Program Cost Analysis Report Series, 1985-86 (Florida Department of Education, 1987a), Programs for Exceptional Students: Annual Report, 1985-86 (Florida Department of Education, 1987b), personnel office records, exceptional education office records, and the district and school level full-time equivalent survey forms for the four FTE counts in 1985-86.

In addition, the estimated expenditures and revenues for a within the district physically impaired and hearing impaired programs were calculated for the host district. First, the programs were defined in terms of their students and their resource requirements. Then, the next step was to translate the resource requirements into an estimated program cost. The estimated costs of the comparable replication program were determined by utilizing the average costs in the Program Cost Analysis Report Series, 1985-86 (Florida Department of Education, 1987a) for the host district. The objects calculated in this manner were salaries and benefits for physical and occupational therapy and speech therapy for the physically impaired, purchased services, materials and supplies, capital outlay, and other expenses for all functions. Salaries for the exceptional education teachers, classroom aides, mainstream aides,

and speech therapist for the hearing impaired were estimated based on the average salary for the host school district as reported by the Florida Department of Education. The salaries for the school psychologist, social worker, and nurse were estimated based on actual salary for the 1985-86 school year. Benefits were calculated for these specific positions based on actual percentages and amounts for the 1985-86 school year.

The host district's total expenditures for the multidistrict physically impaired program for the 1985-86 school year were $278,930.23. The physically impaired students earned 248.60 weighted FTE during the 1985-86 school year which was a cost of $1,122.00 per weighted FTE. The revenues generated were through the physically impaired FTE, basic mainstream FTE, physical and occupational therapy FTE, speech and language FTE, basic FTE, visually handicapped FTE, hospital/homebound FTE, vocational FTE, seventh-period allocation, and P.L. 94-142 federal funds. The total revenues generated for the physically impaired were $458,879.02 with $445,294.02 from the Florida Finance Program and $13,585 from federal funds. In comparing the total revenues generated to the total expenditures, it was determined that the revenues exceeded the expenditures by $179,948.79.

A within the district program was developed for the host district to provide services to their physically impaired students. The estimated expenditures for a within the district program were

$237,544.61. The physically impaired students from the host district would have earned 180.50 weighted FTE during the 1985-86 school year which would have resulted in an estimated cost of $1,316.04 per weighted FTE. The estimated physically impaired revenues generated by a within the district program would have been $333,190.23 with $323,158.23 from the Florida Education Finance Program and $10,032.00 from federal funds. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated revenues exceeded the estimated expenditures by $95,645.62.

The host district's total expenditures for the multidistrict hearing impaired program for the 1985-86 school year were $256,679.75. The hearing impaired students earned 202.97 weighted FTE during the 1985-86 school year which was a cost of $1,264.62 per weighted FTE. The revenues generated were through the hearing impaired FTE, basic mainstream FTE, basic FTE, physical and occupational therapy FTE, vocational FTE, seventh-period allocation, and P.L. 94-142 federal funds. The total revenues generated for the hearing impaired were $375,976.33 with $363,854.33 from the Florida Education Finance Program and $12,122.00 from federal funds. In comparing the revenues to the expenditures, it was determined that the revenues exceeded the expenditures by $119,296.58.

A within the district program was developed for the host district to provide services to their hearing impaired students. The estimated

expenditures for a within the district program were $160,539.10. The hearing impaired students from the host district would have earned 77.55 weighted FTE which would have resulted in an estimated cost of $2,070.14 per weighted FTE. The estimated hearing impaired revenues would have been $143,763.12 with $139,165.12 from the Florida Education Finance Program and $4,598.00 from federal funds. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the revenues by $16,775.98.

The second question of the study was answered by calculating the 10 participating districts' expenditures and revenues for their participation in the multidistrict physically impaired and hearing impaired programs. The cost data were collected through the participating districts' personnel office records, exceptional education office records, transportation office records, and the participating districts' FTE transportation survey forms for the four FTE counts in 1985-86.

Five physically impaired and four hearing impaired students from participating district A were sent to the multidistrict program in 1985-86. The total expenditures for participating district A were $14,478.15 for 1985-86. The total revenues earned during the 1985-86 school year through the Florida Education Finance Program were $16,254.83. In comparing the total expenditures to the total revenues, it was determined that the revenues exceeded the expenditures by $1,776.23.

Three and one-half physically impaired and 11 hearing impaired students from participating district E were sent to multidistrict programs in 1985-86. The total expenditures for participating district E were $36,180.76 for 1985-86. The total revenues earned during the 1985-86 school year through the Florida Education Finance Program were $42,174.19. In comparing the total expenditures to the total revenues, it was determined that the revenues exceeded the expenditures by $5,993.43.

One physically impaired student from participating district C was sent to the multidistrict program in 1985-86. The total expenditures for participating district C were $9,386.80 for 1985-86. The total revenues earned during the 1985-86 school year through the Florida Education Finance Program were $7,272.00. In comparing the expenditures to the revenues, it was determined that the expenditures exceeded the revenues by $2,114.80.

Participating district D had no hearing impaired or physically impaired students during the 1985-86 school year. Therefore no expenditures were incurred and no revenues were generated. Thus, there were no comparisons that could be made between the expenditures and revenues.

Participating district E had no hearing impaired or physically impaired students during the 1985-86 school year. Therefore no expenditures were incurred and no revenues were generated. Thus,

there were no comparisons that could be made between the expenditures and revenues.

One physically impaired and two and one-half hearing impaired students from participating district F were sent to the multidistrict program in 1985-86. Participating district F incurred no expenditures because of their participation in the multidistrict program. In addition, no revenues were generated, therefore no comparisons could be made between expenditures and revenues.

Five physically impaired students from participating district G were sent to the multidistrict program in 1985-86. The total expenditures for participating district G were $34,943.87 for 1985-86. The total revenues earned during the 1985-86 school year through the Florida Education Finance Program were $25,081.78. In comparing the expenditures to the revenues, it was determined that the expenditures exceeded the revenues by $9,862.09.

Two physically impaired and one hearing impaired student from participating district H were sent to the multidistrict programs in 1985-86. The total expenditures for participating district H were $13,500.00 for the 1985-86 school year. The total revenues earned during 1985-86 through the Florida Education Finance Program were $7,142.00. In comparing the expenditures to the revenues, it was determined that the expenditures exceeded the revenues by $6,358.00.

Ten and one-half hearing impaired students from participating district I were sent to the multidistrict program in 1985-86. The total expenditures for participating district I were $41,396.18 in 1985-86. The total revenues earned during 1985-86 through the Florida Education Finance Program were $60,353.32. In comparing the expenditures and revenues, it was determined that the revenues exceeded the expenditures by $18,957.14.

Seven and one-half hearing impaired students from participating district J were sent to the multidistrict program in 1985-86. The total expenditures for district J were $16,930.52 in 1985-86. The total revenues earned during the 1985-86 school year through the Florida Education Finance Program were $22,982.69. In comparing the expenditures and the revenues, it was determined that the revenues exceeded the expenditures by $6,052.17.

The third question of the study was answered by calculating the estimated expenditures and revenues for a within the district program for each of the 10 participating districts. First, the program was defined in terms of its students and its resource requirements. Then, the next step was to translate the resource requirements into an estimated program cost. The estimated costs of the programs were determined by utilizing the average costs of those functions and objects based on the reported cost in the Program Cost Analysis Report Series, 1985-86 (Florida Department of Education, 1987a) for each

participating district. The objects calculated in this manner were purchased services, materials and supplies, capital outlay, and other expenses for all functions. Salaries for teachers, classroom aides, and mainstream aides were estimated based on the average salary for the participating districts as reported by the Florida Department of Education. Benefits were calculated for teacher and aide positions based on the actual percentages and amounts for the 1985-86 school year. The physical and occupational therapy services were estimated on a purchased services basis at the hourly rate used by the specific school district during the 1985-86 school year.

Participating district A staff would have needed to provide services to five physically impaired and four hearing impaired students. Based on this number of students, the estimated expenditures would have been $48,782.92. The total estimated revenues would have been $61,273.07 with $59,392.07 from the Florida Education Finance Program and $1,881.00 from federal funds. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $61,263.85.

Participating district B staff would have needed to provide services to 3.5 physically impaired and 11 hearing impaired students. Based on this number of students, the estimated expenditures would have been $201,391.41. The total estimated revenues would have been $97,439.05 with $94,513.05 from the Florida Education Finance Program

and $2,926.00 from federal funds. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $103,952.00.

Participating district C staff would have needed to provide services to one physically impaired student. Based on this one student, the estimated expenditures would have been $22,942.47. The total estimated revenues would have been $7,914.32 with $7,705.32 from the Florida Education Finance Program and $209.00 from federal funds. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $15,028.15.

Participating district D had no hearing impaired or physically impaired students during the 1985-86 school year. Thus, no within the district program was developed.

Participating district E had no hearing impaired or physically impaired students during the 1985-86 school year. Thus, no within the district program was developed.

Participating district F leaders would have needed to provide services to two and one-half hearing impaired and one physically impaired students. Based on this number of students, the estimated expenditures would have been $97,717.38. The total estimated revenues would have been $22,020.48 with $21,393.48 from the Florida Education Finance Program and $627.00 from federal funds. In comparing the

estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $75,696.90.

Participating district G staff would have needed to provide services to five physically impaired students. Based on this number of students, the estimated expenditures would have been $95,473.79. The total estimated revenues would have been $38,840.16 with $37,795.16 from the Florida Education Finance Program and $1,045.00 from federal funds. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $56,633.63.

Participating district H staff would have needed to provide services to two physically impaired students and one hearing impaired student. Based on this number of students, the estimated expenditures would have been $58,817.71. The total estimated revenues would have been $15,591.93 with $14,964.93 from the Florida Education Finance Program and $627.00 from federal funds. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $43,225.78.

Participating district I staff would have needed to provide services to 10.5 hearing impaired students. Based on the number of students, the estimated expenditures would have been $123,220.48. The total estimated revenues would have been $62,939.03 with $60,640.13 and

$2,299.10 from federal funds. In comparing the estimated revenues to the estimated expenditures, it was determined that the estimated expenditures exceeded the estimated revenues by $60,281.45.

Participating district J staff would have needed to provide services to seven and one-half hearing impaired students. Based on the number of students, the estimated expenditures would have been $87,999.39. The total estimated revenues would have been $51,883.96 with $50,420.96 from the Florida Education Finance Program and $1,463.00 from federal funds. In comparing the estimated revenues to the estimated expenditures, expenditures exceeded the estimated revenues by $36,115.43.

An analysis of the data resulted in the following findings:

1. The host district's cost per weighted FTE for a physically impaired student in a multidistrict program was less than the cost for the same student in a within the district program. The cost for a host district physically impaired student in a multidistrict program was $1,122.00 per weighted FTE and for a within the district program the estimated cost per weighted FTE was $1,316.04. Therefore, the cost per weighted FTE would be higher for the host district leaders if they established a within district program for their physically impaired students.
2. For the host district, the Florida Education Finance Program revenues exceeded the expenditures for direct costs

for the physically impaired multidistrict program and the within the district physically impaired program. However, the multidistrict program revenues provided $166,363.79 or 37% of the Florida Education Finance Program revenues for indirect school and district costs. The within the district program revenues would have provided $85,613.62 or 26% of the Florida Education Finance Program revenues for indirect school district costs. The Florida Education Finance Program would have provided sufficient revenues to support both programs; however, the multidistrict physically impaired program generated a larger percentage of funds that would have been available for indirect costs.

3. The host district's cost per weighted FTE for a hearing impaired student in a multidistrict program was less than the cost for the same student in a within the district program. The cost for a host district hearing impaired student in a multidistrict program was $1,264.62 per weighted FTE and for a within the district hearing impaired program the estimated cost per weighted FTE would have been $2,070.14. Therefore, the cost per weighted FTE would have been higher for the host district leaders if they established a within the district program for their hearing impaired students.

4. For the host district, the Florida Education Finance Program revenues exceeded the expenditures for direct costs for the hearing impaired multidistrict program. However, for the within the district hearing impaired program, the Florida Education Finance Program would not have generated sufficient funds to support the estimated direct expenditures. The multidistrict hearing impaired program revenues provided $107,174.58 or 29% of the Florida Education Finance Program revenues for indirect school and district costs while the within the district hearing impaired program would not have generated sufficient Florida Education Finance Program revenues to provide support for the indirect school and district costs.

5. The participating districts generated costs that were involved in the transportation of their students to the multidistrict programs. No additional direct costs were identified. The Florida Education Finance Program provided revenues to the participating districts through the transportation FTE allocation. The impact of the density index was the key element in the revenues generated. Four participating districts generated Florida Education Finance Program transportation revenues that exceeded their expenditures. These districts' policy-makers actually

received additional revenues that they would not have otherwise obtained without their participation in the multidistrict program. There were three districts in which the leaders incurred expenditures that exceeded their Florida Education Finance Program revenues. In two of these districts the administrators had contracted with a private individual to transport their students and this did not have the impact of a change in the density index on their overall district transportation formula. In the third district the administrators had hired an unusually large number of bus aides which impacted their overall expenditures. All of the participating districts could utilize the Florida Education Finance Program transportation FTE and the density index to generate sufficient revenues to exceed their expenditures for their participation in the multidistrict programs.

6. From the within the district program developed for all of the participating districts with eligible students, it was found the estimated expenditures exceeded the estimated Florida Education Finance Program revenues for all the participating districts. Even for those participating districts where higher expenditures than revenues in the multidistrict programs had been incurred, the within the district programs estimated expenditures exceeded the estimated revenues at an excessively

elevated level. Thus, the participation in the multidistrict program was a less expense educational alternative for policy-makers of all the participating districts.

7. Based on the within the district programs developed, the estimated expenditures would have been reduced by eliminating some of the services or by placing students in varying exceptionalities programs. This study represented an attempt to establish a comparable replication of the multidistrict programs to include both quantity and quality of services, however, this study was a cost-efficient study rather than a cost-benefit study. It would be possible to reduce the costs by providing different or less services to the physically impaired and hearing impaired students.

Conclusions

The findings of this study resulted in the following conclusions:

1. It is more cost efficient for a host district policy-makers to serve their low incidence students in a multidistrict program than in a within the district program. As the number of students in a program increases, the cost per weighted FTE decreases. If a host district staff can accept additional students without increasing the need for additional facilities or instructional support services, the host district will generate sufficient revenues to defray the direct expenditures

of the program and have additional funds for the district- and school-level redistributed indirect costs.

2. It is more cost efficient for participating district policy-makers to serve their low incidence students in a multidistrict program than to provide a within the district program. In addition, if a district is sparsely populated, it is more cost efficient to serve some handicapping conditions that have higher incidence rates in a multidistrict program than to provide a within the district program. A sufficient number of students in various age groupings must be identified in a district to provide an appropriate continuum of service at an efficient cost. Leaders in participating districts with an insufficient number of students will incur excess expenditures in direct cost of the exceptional education program as well as in the utilization of facilities and instructional support staff.

3. The district staff who provides the transportation for the students to the multidistrict program will generate additional revenues from their transportation allocation. In Florida, the transportation density index encouraged the multidistrict program by providing additional funds for all the transported students of the district based on the length of the bus routes. The greater the length of a bus route, the more impact it had on the density index. In addition, as the number of students

that are transported on lengthy bus routes is increased, the amount of revenues generated is increased.

Recommendations

Several recommendations for more cost-efficient exceptional education programs and for further research became apparent. These recommendations are as follows:

1. The State of Florida policy-makers should establish incentives to encourage the utilization of multidistrict programming. A method of fiscal incentives would encourage the multidistrict approach for low incidence exceptional education students and for exceptional students in sparsely populated areas. A school district staff could be compensated for accepting exceptional education students from other districts by increasing the state funding for these students. The programming for these students would then be more cost efficient on a per weighted FTE basis.
2. The State of Florida policy-makers should encourage district leaders to accept the host district role by providing special capital outlay funds for facilities for multidistrict exceptional education programs. This procedure would result in reduced state cost for exceptional education facilities by centralizing selected students.

3. The host district administrators should consider transporting the students from the participating districts. In Florida, with the impact of the density index, the host district leaders would generate additional dollars from the Florida Education Finance Program transportation allocation. The impact of the density index was related to the size of the district, that is, the more students a district staff transported the greater the generated revenues. With the transportation coordinated by one district staff rather than those of 10 districts, the difficulties in transporting students for lengthy distances could be better facilitated.
4. The cost models should be implemented in other multidistrict programs in Florida to determine if the results are consistent in other host and participating districts. Further cost model implementation research should be focused on the relationship of the cost of the multidistrict program to the total student population of the host district. The size of the host district in this study was a medium sized district in Florida with a student population of 22,774 in 1985-86. The student populations of the participating districts ranged from 1,475 through 24,735 (Florida Department of Education, 1986). It is recommended that a study be completed to determine the shape of the cost curve in relation to the size of total student population in the host and participating districts.

APPENDIX
DATA COLLECTION FORMS

Form A

Financial Data Collection Form

Program _____ School _____

Function	Salaries	Employee Benefits	Purchased Services	Materials & Supplies	Capital Outlay	Other Expenses	Total

Form B

FTE Data Collection Form

Student _____ School _____

Base County _____ Grade _____

Program	Number	Time in Program	Count 1 FTE	Count 2 FTE	Count 3 FTE	Count 4 FTE	Total FTE
K-3 Basic	101						
4-8 Basic	102						
9-12 Basic	103						
Ed Alt	115						
EMH	201						
TMH	202						
PI	203						
PT/OT	204						
S/L/H PT	205						
S/L/H	206						
VH PT	207						
VH	208						
EH PT	209						
EH	210						
SLD PT	211						
SLD	212						
GIFTED	213						
H/H PT	214						
PH	215						

Form C

Multidistrict Program Questionnaire

Structured Interview Form

County _____

1. Does your county host or participate in a multidistrict exceptional education program?

2. Which exceptionalities in your county were involved in a multidistrict program in 1985-86?

Program Name	Program Number

3. How many students from your county were involved in each of the exceptionalities indicated above?

Program Name	Number

4. Identify the types of expenditures incurred by your district's participation in (hosting) a multidistrict exceptional education program.

5. Which expenditure(s) have the most impact on your district's participation in (hosting) a multidistrict exceptional education program?

6. Do you feel that a "within the district" program would eliminate these costs?

7. Have you ever considered establishing a "within the district" program?

8. What has prevented your district from establishing a "within the district" program?

9. What are the advantages of participating in (hosting) a multidistrict program?

10. What are the disadvantages of participating in (hosting) a multidistrict program?

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BIOGRAPHICAL SKETCH

Vivian Crowder Guarnera was born in Meunde, Oklahoma, in 1942. She is the daughter of L. H. and Marie Crowder of Meunde, Oklahoma. In 1960, she graduated from Meunde High School and, in 1964, she graduated from Oklahoma State University with a bachelor's degree in mathematics.

Following the receipt of her bacheler's degree, she taught mathematics and science for three years in Dallas, Texas, and Miami, Florida. In 1967, she began teaching special education in Palatka, Florida, and remained in that position for 4 years.

In 1970, she received the degree of Master of Education with a major in mental retardation from the University of Florida. Since 1971, she has served as a resource teacher for exceptional education and as the Director for Exceptional Education for Putnam County Schools in Palatka, Florida.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

James W. Longstreth, Chair
Associate Professor of Educational Leadership

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

James E. Heald
Professor of Educational Leadership

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

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This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Education.

April, 1988

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